

Origin Materials Proxy Statement and Annual Report



2024



ORIGIN MATERIALS, INC.
930 Riverside Parkway, Suite 10
West Sacramento, California 95605

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
To Be Held at 7:45 a.m. Eastern Time on Thursday, May 2, 2024

Dear Stockholders of Origin Materials, Inc.:

We cordially invite you to attend the 2024 annual meeting of stockholders (the “Annual Meeting”) of Origin Materials, Inc., a Delaware corporation, which will be held on **Thursday, May 2, 2024 at 7:45 a.m. Eastern Time**. To facilitate stockholder participation in the Annual Meeting, this year, the Annual Meeting will be held through a live webcast. In order to attend the Annual Meeting, you must register in advance at www.proxydocs.com/ORGN prior to the deadline of 7:45 a.m. Eastern Time on May 2, 2024. After completing the registration, you will receive a confirmation email, which will include information about when you should expect to receive a unique link to gain access to the Annual Meeting. You will not be able to attend the meeting in person. The meeting will be held for the following purposes, as more fully described in the accompanying proxy statement (the “Proxy Statement”):

1. To elect the three nominees named in the accompanying Proxy Statement to serve as Class III directors until the 2026 annual meeting of stockholders and until their successors are duly elected and qualified;
2. To ratify the appointment of Deloitte & Touche LLP (“Deloitte”) as our independent registered public accounting firm for our fiscal year ending December 31, 2024;
3. To approve, on a non-binding, advisory basis, the compensation of our named executive officers, as disclosed in the Proxy Statement;
4. To approve the amendment of our amended and restated certificate of incorporation to effect a reverse split of our common stock at a ratio in the range of one-for-five to one-for-thirty, such ratio to be determined in the discretion of our board of directors; and
5. To transact such other business as may properly come before the Annual Meeting or any adjournments or postponements thereof.

Our board of directors has fixed the close of business on March 11, 2024 as the record date for the Annual Meeting. Only stockholders of record on March 11, 2024 are entitled to notice of and to vote at the Annual Meeting. Further information regarding voting rights and the matters to be voted upon is presented in the accompanying Proxy Statement.

On or about March 22, 2024, we expect to mail the Notice of Internet Availability of Proxy Materials (the “Notice”) to our stockholders. The Notice will contain instructions on how to access our Proxy Statement and our annual report. The Notice provides instructions on how to vote via the Internet or by telephone and includes instructions on how to receive a paper copy of our proxy materials by mail. The accompanying Proxy Statement and our annual report can be accessed directly at the following Internet address: www.proxydocs.com/ORGN. All you have to do is enter the control number located on your Notice or proxy card.

YOUR VOTE IS IMPORTANT. Whether or not you plan to attend the Annual Meeting, we urge you to submit your vote promptly via the Internet, telephone or mail.

We appreciate your continued support of Origin.

By order of the board of directors,



John Bissell
Co-Chief Executive Officer
West Sacramento, California
March 22, 2024



Rich Riley
Co-Chief Executive Officer
West Sacramento, California
March 22, 2024

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ORIGIN MATERIALS, INC.

PROXY STATEMENT FOR 2024 ANNUAL MEETING OF STOCKHOLDERS To Be Held at 7:45 a.m. Eastern Time on Thursday, May 2, 2024

This Proxy Statement and the enclosed form of proxy are furnished in connection with the solicitation of proxies by our board of directors for use at the 2024 annual meeting of stockholders of Origin Materials, Inc., a Delaware corporation (“Origin” or the “Company”), and any postponements, adjournments or continuations thereof (the “Annual Meeting”). The Annual Meeting will be held on Thursday, May 2, 2024 at 7:45 a.m. Eastern Time. To facilitate stockholder participation in the Annual Meeting, this year, the Annual Meeting will be held through a live webcast. In order to attend the Annual Meeting, you must register in advance at www.proxydocs.com/ORGN prior to the deadline of 7:45 a.m. Eastern Time on May 2, 2024. After completing the registration, you will receive a confirmation email, which will include information about when you should expect to receive a unique link to gain access to the Annual Meeting. You will not be able to attend the meeting in person. The Notice of Internet Availability of Proxy Materials (the “Notice”) containing instructions on how to access this Proxy Statement and our annual report is first being mailed or available to stockholders on or about March 22, 2024 to all stockholders entitled to vote at the Annual Meeting.

The information provided in the “question and answer” format below is for your convenience only and is merely a summary of the information contained in this Proxy Statement. You should read this entire Proxy Statement carefully. Information contained on, or that can be accessed through, our website is not intended to be incorporated by reference into this Proxy Statement and references to our website address in this Proxy Statement are inactive textual references only.

What is Origin?

Origin is an innovative materials company with a mission to enable the world’s transition to sustainable materials. We have pioneered a technology that has the potential to replace petroleum-based materials with decarbonized materials in a wide range of end products, such as food and beverage packaging, clothing, textiles, plastics, car parts, carpeting, tires, adhesives, soil amendments, fuels, and more. We have also developed other products that can enhance sustainability, such as our 100% PET circular caps that can enable fully-recyclable PET beverage bottles and reduce waste through light-weighting, while providing enhanced performance such as greater oxygen and CO2 barrier properties that increase shelf-life. These products complement our biomass conversion technology.

We believe that our biomass conversion technology can help make the world’s transition to “net zero” possible and support the fulfillment of greenhouse gas reduction pledges made by countries as part of the United Nations Paris Agreement as well as corporations that are committed to reducing emissions in their supply chains.

Our proprietary biomass conversion technology can use sustainable feedstocks such as sustainably harvested wood residues, agricultural waste, wood waste and even corrugated cardboard to produce materials and products that are currently made from fossil feedstocks such as petroleum and natural gas. The ability to use sustainable feedstocks that are not used in food production is one of the things that differentiates our biomass conversion technology from other sustainable materials companies that are limited to feedstocks used in food production such as vegetable oils or high fructose corn syrup and other sugars.

We believe that products made using Origin’s biomass conversion technology at commercial scales will be able to compete directly with petroleum-derived products on both performance and price while being sustainable. Due to abundant and renewable wood supplies that have historically stable pricing, our cost of production when using these feedstocks is expected to be more stable than potential competing platforms that

use other types of feedstocks. We believe that end products made at commercial scale using our biomass conversion technology and wood feedstocks will have a significant unit cost advantage over products made from other low carbon feedstocks.

Our chemicals can be converted into both “drop-in” materials and new materials with differentiated functional performance. The “drop-in” products are chemically fungible with those produced from petroleum-based raw materials, and therefore these “drop-in” products can be fed into existing supply chains without modification to the equipment or production processes of our customers.

Origin’s capability to produce carbon negative materials is protected by an intellectual property portfolio comprised of over 40 patents as well as trade secrets covering non-discoverable aspects of Origin’s critical manufacturing processes.

We have developed strong partnerships with large, brand-name corporations determined to transition to sustainable materials to help meet their emissions reduction goals. For example, in 2017, we founded the “NaturALL Bottle Alliance” with Danone and Nestlé Waters, with PepsiCo joining in 2018, to accelerate the development of innovative packaging solutions made with 100% sustainable and renewable resources. Each member of the NaturALL Bottle Alliance has agreed to assist in establishing a supply chain for the production of the sustainable materials being developed by the NaturALL Bottle Alliance. Each member also agreed to provide technical equipment, resources, know-how and scientific skills necessary for the performance of the NaturALL Bottle Alliance’s research and development program, and to be responsible for its own expenses. The members’ agreements with us provided additional financial support for the research and development program and the commercialization of sustainable materials under development by the NaturALL Bottle Alliance. In addition to being customers, Danone, Nestlé and PepsiCo also invested in Origin. We have also significantly expanded our customer and partnership base over time to other industries, including relationships with Ford Motor Company, Mitsubishi Gas Chemical, PrimaLoft, Solvay, AECI, Stepan, Mitsui & Co., Packaging Matters, Minafin Group, LVMH Beauty, Mitsubishi Chemical Group, Kuraray, Revlon, ATC Plastics, Intertex, and others.

We also expect to accelerate the development of high-performance products through technology collaborations and joint development agreements with current and prospective customers. In these relationships, we expect to supply expertise and materials, including products we manufacture at our Origin 1 plant, and our customer partner provides funding and its own expertise. Together, we work to test and establish market demand, product formulations, and specifications that meet the customer’s needs in anticipation of that customer’s purchase of commercial volumes of the co-developed product.

For example, we have created an all-PET (polyethylene terephthalate) bottle cap, making “100% recycled PET” possible from cap to bottle to improve post-consumer recycling. Our PET caps are more sustainable than common alternatives because they may be produced with any type of PET, from recycled PET to Origin’s 100% bio-based, carbon-negative virgin PET. PET offers better oxygen and CO₂ barrier than HDPE and PP, common materials used in the production of caps.

Our vision for the future is the replacement of fossil-based feedstocks and materials with non-food, plant-based feedstocks and materials, while capturing carbon in the process. Our decarbonizing biomass conversion technology potentially addresses an estimated \$1.0 trillion dollar market opportunity, and we believe it can help revolutionize the production of a wide range of end products.

On June 25, 2021, Artius Acquisition Inc. (“Artius”) completed a merger with Micromidas, Inc. (now known as Origin Materials Operating, Inc., “Origin Operating”). Upon closing of the transactions (the “Business Combination”), Artius acquired 100% of the issued and outstanding common shares of Origin Operating in exchange for shares of common stock of Artius, and Origin Operating became a wholly owned subsidiary of Artius. Upon the closing of the Business Combination, we changed our name from Artius Acquisition Inc. to Origin Materials, Inc. (“Origin” or the “Company”). The executive officers of Artius resigned, and the executive officers of Origin Operating were appointed to be the executive officers of Origin

Materials, Inc. In addition, certain members of the Artius board of directors and Origin Operating board of directors resigned in connection with the Business Combination.

What matters am I voting on?

You will be voting on the following proposals:

- the election of three Class III directors as named in this Proxy Statement to serve until our 2026 annual meeting of stockholders;
- the ratification of the appointment of Deloitte as our independent registered public accounting firm for our fiscal year ending December 31, 2024;
- the approval, on a non-binding, advisory basis, of the compensation of our named executive officers;
- the approval of the amendment of our amended and restated certificate of incorporation to effect a reverse split of our common stock at a ratio in the range of one-for-five to one-for-thirty, such ratio to be determined in the discretion of our board of directors; and
- any other business as may properly come before the Annual Meeting.

As of the date of this Proxy Statement, we are not aware of any other matters that will be presented for consideration at the Annual Meeting.

How does the board of directors recommend I vote on these proposals?

Our board of directors recommends a vote:

- “FOR” the election of John Bissell, John Hickox, Jim Stephanou as Class III directors;
- “FOR” the ratification of the appointment of Deloitte as our independent registered public accounting firm for our fiscal year ending December 31, 2024;
- “FOR” the approval, on a non-binding, advisory basis, of the compensation of our named executive officers, as disclosed in this Proxy Statement; and
- “FOR” approval of the amendment of our amended and restated certificate of incorporation to effect a reverse split of our common stock at a ratio in the range of one-for-five to one-for-thirty, such ratio to be determined in the discretion of our board of directors.

Who is entitled to vote?

Holders of our common stock as of the close of business on March 11, 2024, the record date for the Annual Meeting (the “Record Date”), will be entitled to notice of and to vote at the Annual Meeting.

Registered Stockholders. If on the Record Date, shares of our common stock are registered directly in your name with our transfer agent, you are considered the stockholder of record with respect to those shares and the Notice was provided to you directly by us. As the stockholder of record, you have the right to grant your voting proxy directly to the individuals listed on the proxy card or vote in person at the Annual Meeting. Throughout this Proxy Statement, we refer to these registered stockholders as “stockholders of record.”

Street Name Stockholders. If on the Record Date, shares of our common stock are held on your behalf in a stock brokerage account, or by a bank, trustee or other nominee, you are considered the beneficial owner of shares held in “street name,” and the Notice was forwarded to you by your broker or nominee, who is considered the stockholder of record with respect to those shares. As the beneficial owner, you have the right to direct your broker, bank or other nominee as to how to vote your shares and are also invited to attend the Annual Meeting. However, since a beneficial owner is not the stockholder of record, you may not vote your shares of our common stock in person at the Annual Meeting unless you follow your broker or nominee’s

procedures for obtaining a legal proxy. Your broker or nominee is obligated to provide you with instructions to vote before the Annual Meeting or to obtain a legal proxy if you wish to vote in person at the Annual Meeting. If your broker or nominee is participating in an online program that allows you to vote over the Internet or by telephone, your Notice or other voting instruction form will include that information. If what you receive from your broker or other nominee does not contain Internet or telephone voting information, please complete and return the paper form in the self-addressed, postage paid envelope provided by your broker or nominee. Throughout this Proxy Statement, we refer to stockholders who hold their shares through a broker, bank, trustee or other nominee as “street name stockholders.”

A list of stockholders of record entitled to vote shall be available to any stockholder for any purpose relevant to the Annual Meeting for 10 days prior to the Annual Meeting upon request to the Office of the Corporate Secretary. Please send the request to Origin Materials, Inc., Attention: Secretary, 930 Riverside Parkway, Suite 10, West Sacramento, California 95605.

What constitutes a quorum for the Annual Meeting?

A quorum is required for stockholders to conduct business at the Annual Meeting. The presence, in person or represented by proxy, of the holders of a majority of the outstanding shares of our common stock is necessary to establish a quorum at the meeting. As of the close of business on the Record Date, there were 146,438,058 shares of our common stock outstanding. Shares present, in person or represented by proxy, including shares as to which authority to vote on any proposal is withheld, shares abstaining as to any proposal and broker non-votes (where a broker submits a properly executed proxy but does not have authority to vote a stockholder’s shares) on any proposal will be considered present at the meeting for purposes of establishing a quorum.

How many votes do I have?

In deciding all matters at the Annual Meeting, each stockholder will be entitled to one vote for each share of our common stock held by them on the Record Date. Stockholders are not permitted to cumulate votes with respect to the election of directors.

How many votes are needed to approve each proposal?

- *Proposal No. 1:* The election of directors requires a plurality vote of the shares of our common stock present in person or represented by proxy at the Annual Meeting and entitled to vote. “Plurality” means that the nominees who receive the largest number of votes cast “FOR” are elected as directors. Any shares not voted “FOR” a particular nominee (as a result of an abstention or a broker non-vote) will not be counted in such nominee’s favor and will have no effect on the outcome of the election. You may vote “FOR” or “WITHHELD” on each of the nominees.
- *Proposal No. 2:* The ratification of the appointment of Deloitte requires the affirmative vote of a majority of the shares of our common stock present in person or represented by proxy at the Annual Meeting and entitled to vote on the matter. “Majority” means the number of shares voted “FOR” must exceed the number of votes “AGAINST.” Abstentions are considered votes present and entitled to vote on this proposal, and thus, will have the same effect as a vote “AGAINST.” Broker non-votes will have no effect on the outcome of this proposal.
- *Proposal No. 3:* The determination, on a non-binding, advisory basis, of our stockholders’ preference regarding the compensation of our named executive officers requires a majority vote of the shares of our common stock present in person or represented by proxy at the Annual Meeting and entitled to vote on the matter. You may indicate whether you approve, on a non-binding advisory basis, of the compensation of our named executive officers, or you may “abstain” from voting on the proposal. “Majority” means the number of shares voted “FOR” must exceed the number of votes “AGAINST.” Abstentions are considered votes present and entitled to vote on this proposal, and thus, will have the

same effect as a vote “AGAINST.” Broker non-votes will have no effect on the outcome of this proposal.

- *Proposal No. 4:* The approval of the amendment of our amended and restated certificate of incorporation to effect a reverse split of our common stock at a ratio in the range of one-for-five to one-for-thirty, such ratio to be determined in the discretion of our board of directors, requires the affirmative vote of the holders of a majority of the total votes cast on the proposal. “Majority” means the number of shares voted “FOR” must exceed the number of votes “AGAINST.” Abstentions and broker non-votes are not treated as votes cast and, therefore, will have no effect.

How do I vote?

If you are a stockholder of record, there are three ways to vote:

- **By Internet:** You may submit a proxy over the Internet by following the instructions at proxypush.com/ORGN, 24 hours a day, seven days a week, until 7:45 a.m. Eastern Time on May 2, 2024 (have your Notice or proxy card in hand when you visit the website);
- **By Toll-free Telephone:** You may submit a proxy by calling 1-866-230-6295 24 hours a day, seven days a week, until 7:45 a.m. Eastern Time on May 2, 2024 (have your Notice or proxy card in hand when you call); or
- **By Mail:** You may complete, sign and mail your proxy card (if you received printed proxy materials) which must be received by us by 7:45 a.m. Eastern Time on May 2, 2024.

If you are a street name stockholder, you will receive voting instructions from your broker, bank or other nominee. You must follow the voting instructions provided by your broker, bank trustee or other nominee in order to instruct your broker or other nominee on how to vote your shares. Street name stockholders should generally be able to vote by returning an instruction card, by telephone or by Internet. However, the availability of telephone and Internet voting will depend on the voting process of your broker or other nominee. As discussed above, if you are a street name stockholder, you may not vote your shares in person at the Annual Meeting unless you obtain a legal proxy from your broker, bank, trustee or other nominee.

Can I change my vote after submitting my proxy?

Yes. If you are a stockholder of record, you can change your vote or revoke your proxy any time before date of the Annual Meeting in any one of the following ways:

- You may enter a new vote by Internet or by telephone until 7:45 a.m. Eastern Time on May 2, 2024;
- You may submit another properly completed, proxy card by mail with a later date, which must be received by us by 7:45 a.m. Eastern Time on May 2, 2024; or
- You may send written notice that you are revoking your proxy to our Secretary at Origin Materials, Inc., 930 Riverside Parkway, Suite 10, West Sacramento, California 95605, which must be received by us by 7:45 a.m. Eastern Time on May 2, 2024.

If you are a street name stockholder, your broker or nominee can provide you with instructions on how to change your vote.

What is the effect of giving a proxy?

Proxies are solicited by and on behalf of our board of directors. Our board of directors has designated John Bissell, Rich Riley, Matt Plavan, and Joshua Lee as proxy holders. When proxies are properly dated, executed and returned, the shares represented by such proxies will be voted at the Annual Meeting in accordance with the instructions of the stockholder. If no specific instructions are given, however, the shares will be voted in accordance with the recommendations of our board of directors as described under “*How does*

the board of directors recommend I vote on these proposals?” above. If any matters not described in this Proxy Statement are properly presented at the Annual Meeting, the proxy holders will use their own judgment to determine how to vote the shares. If the Annual Meeting is adjourned to a later date, the proxy holders can vote the shares on the new Annual Meeting date as well, unless you have properly revoked your proxy instructions before the new date, as described above.

Why did I receive a Notice of Internet Availability of Proxy Materials instead of a full set of proxy materials?

In accordance with the rules of the Securities and Exchange Commission (“SEC”), we have elected to furnish our proxy materials, including this Proxy Statement and our annual report, primarily via the Internet. The Notice containing instructions on how to access our proxy materials is first being mailed on or about March 22, 2024 to all stockholders entitled to vote at the Annual Meeting. Stockholders may request to receive all future proxy materials in printed form by mail or electronically by e-mail by following the instructions contained in the Notice. We encourage stockholders to take advantage of the availability of our proxy materials on the Internet to help reduce the environmental impact of our annual meetings of stockholders.

How are proxies solicited for the Annual Meeting and who will bear the cost of this solicitation?

Our board of directors is soliciting proxies for use at the Annual Meeting. All expenses associated with this solicitation will be borne by us. We will reimburse brokers or other nominees for reasonable expenses that they incur in sending our proxy materials to you if a broker or other nominee holds shares of our common stock on your behalf. In addition, our directors and employees may also solicit proxies in person, by telephone, or by other means of communication. Our directors and employees will not be paid any additional compensation for soliciting proxies.

How may my brokerage firm or other nominee vote my shares if I fail to provide timely directions?

Brokerage firms and other nominees, for example banks or agents, holding shares of our common stock in street name for their customers are generally required to vote such shares in the manner directed by their customers. In the absence of timely directions, your broker will have discretion to vote your shares on Proposal No. 2, a “routine” matter, but brokers and nominees cannot use their discretion to vote “uninstructed” shares with respect to matters that are considered “non-routine” under the rules of the New York Stock Exchange (“NYSE”). “Non-routine” matters are matters that may substantially affect the rights or privileges of stockholders, such as mergers, stockholder proposals, election of directors (even if not contested), executive compensation (including any advisory stockholder vote on executive compensation) and certain corporate governance proposals, even if management supported. Accordingly, your broker or nominee may not vote your shares on Proposals No. 1 or No. 3 without your instructions, but may vote your shares on Proposal No. 2. We have been advised that Proposal No. 4 will be a discretionary proposal considered “routine” under the rules of the NYSE, and thus your broker or nominee may vote on such proposal.

Where can I find the voting results of the Annual Meeting?

We will announce preliminary voting results at the Annual Meeting. We will also disclose voting results on a Current Report on Form 8-K (“Form 8-K”) that we will file with the SEC within four business days after the Annual Meeting. If final voting results are not available to us in time to file a Form 8-K within four business days after the Annual Meeting, we will file a Form 8-K to publish preliminary results and will provide the final results in an amendment to the Form 8-K as soon as they become available.

What is the deadline for stockholders to propose actions for consideration at next year’s annual meeting of stockholders or to nominate individuals to serve as directors?

Stockholder Proposals

Stockholders may present proper proposals for inclusion in our Proxy Statement and for consideration at the next annual meeting of stockholders by submitting their proposals in writing to our Secretary in a timely manner. For a stockholder proposal to be considered for inclusion in our Proxy Statement for our 2025 annual meeting of stockholders, our Secretary must receive the written proposal at our principal executive offices not later than November 22, 2024. In addition, stockholder proposals must comply with the requirements of Rule 14a-8 regarding the inclusion of stockholder proposals in company-sponsored proxy materials. Stockholder proposals should be addressed to:

Origin Materials, Inc.
Attention: Secretary
930 Riverside Parkway, Suite 10,
West Sacramento, California 95605

Our amended and restated bylaws also establish an advance notice procedure for stockholders who wish to present a proposal before an annual meeting of stockholders but do not intend for the proposal to be included in our Proxy Statement. Our amended and restated bylaws provide that the only business that may be conducted at an annual meeting of stockholders is business that is (i) specified in our proxy materials with respect to such meeting, (ii) otherwise properly brought before such meeting by or at the direction of our board of directors, or (iii) properly brought before such meeting by a stockholder of record entitled to vote at the annual meeting who has delivered timely written notice to our Secretary, which notice must contain the information specified in our amended and restated bylaws. To be timely for our 2025 annual meeting of stockholders, our Secretary must receive the written notice at our principal executive offices:

- not earlier than the close of business on January 2, 2025 and
- not later than the close of business on February 1, 2025.

In the event that we hold our 2025 annual meeting of stockholders more than 30 days before or more than 30 days after the one-year anniversary of the Annual Meeting, notice of a stockholder proposal that is not intended to be included in our Proxy Statement must be received no earlier than the close of business on the 120th day before our 2025 annual meeting of stockholders and no later than the close of business on the later of the following two dates:

- the 90th day prior to our 2025 annual meeting of stockholders; or
- the 10th day following the day on which public announcement of the date of our 2025 annual meeting of stockholders is first made.

If a stockholder who has notified us of his, her or its intention to present a proposal at an annual meeting does not appear to present his, her or its proposal at such annual meeting, we are not required to present the proposal for a vote at such annual meeting.

Nomination of Director Candidates

You may propose director candidates for consideration by our Nominating and Corporate Governance Committee. Any such recommendations should include the nominee’s name and qualifications for membership on our board of directors and should be directed to our Secretary at the address set forth above. For additional information regarding stockholder recommendations for director candidates, see “Board of Directors and Corporate Governance—Stockholder Recommendations for Nominations to the Board of Directors.”

In addition, our amended and restated bylaws permit stockholders to nominate directors for election at an annual meeting of stockholders. To nominate a director, the stockholder must provide the information required by our amended and restated bylaws and send timely notice to our Secretary in accordance with our amended

and restated bylaws, which, in general, require that the notice be received by our Secretary within the time periods described above under “Stockholder Proposals” for stockholder proposals that are not intended to be included in a Proxy Statement. In addition to satisfying the foregoing requirements under our amended and restated bylaws, a stockholder who intends to solicit proxies in support of director nominees other than the Company’s nominees must comply with the additional requirements of Rule 14a-19(b) under the Exchange Act.

Availability of Bylaws

Our bylaws are part of our public filings on the SEC’s website at www.sec.gov. You may also contact our Secretary at our principal executive offices for a copy of the relevant bylaw provisions regarding the requirements for making stockholder proposals and nominating director candidates.

DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Our business affairs are managed under the direction of our board of directors, which is currently composed of nine members. Seven of our directors are independent within the meaning of the listing standards of The Nasdaq Stock Market (“Nasdaq”). Our board of directors is divided into three staggered classes of directors. At the annual meeting of stockholders, a class of directors will be elected for a two-year term to succeed the same class whose term is then expiring.

The following table sets forth the names, ages as of March 8, 2024, and certain other information for our executive officers, each of the directors with terms expiring at the Annual Meeting (who are also nominees for election as a director at the Annual Meeting), and for each of the continuing members of our board of directors:

Name	Age	Position
Executive Officers		
John Bissell	38	Co-Chief Executive Officer and Director
Rich Riley	50	Co-Chief Executive Officer and Director
Matt Plavan	60	Chief Financial Officer
Joshua Lee	47	General Counsel, Secretary

Name	Class	Age	Position	Current Term Expires	Expiration of Term For Which Nominated
Directors with Terms Expiring at the Annual Meeting/Nominees					
John Bissell	III	38	Co-Chief Executive Officer and Director	2024	2026
John Hickox ⁽¹⁾⁽²⁾	III	67	Director ⁽⁴⁾	2024	2026
Jim Stephanou	III	58	Director	2024	2026
Continuing Directors					
Pia Heidenmark Cook ⁽¹⁾⁽²⁾	I	52	Director	2025	—
Kathleen B. Fish ⁽²⁾⁽³⁾	II	66	Director	2026	—
William J. Harvey ⁽¹⁾⁽²⁾	I	73	Director	2025	—
Rich Riley	II	50	Co-Chief Executive Officer and Director	2026	—
Craig A. Rogerson ⁽¹⁾⁽³⁾	I	67	Director	2025	—
R. Tony Tripeny	II	65	Director	2026	—

(1) Member of the Audit Committee

(2) Member of the Nominating and Corporate Governance Committee

(3) Member of the Compensation Committee

(4) Mr. Hickox became a member of the board of directors on March 1, 2024.

Executive Officers

John Bissell co-founded Origin Materials in November 2008 and served as its Chief Executive Officer—now co-Chief Executive Officer—and a member of its board of directors since inception. Mr. Bissell was trained as a chemical engineer at UC Davis, and has extensive experience in R&D, engineering, and business development in the chemical industry. He's been recognized by the US EPA, Forbes, and the University of California for his professional and technical contributions. Finally, he's raised over half a billion USD in capital, and took Origin Materials public in 2021. We believe

that Mr. Bissell’s extensive experience in the materials industry, his experience as an executive, and his leadership of Origin qualify him to serve as our director.

Rich Riley has served as Co-Chief Executive Officer and a member of the board of directors of Origin Materials since October 2020. Mr. Riley has been an advisor to and investor in Origin since 2010. From April 2013 to January 2019, Mr. Riley was the Chief Executive Officer of Shazam Entertainment Ltd, a leading mobile music application that was acquired by Apple Inc. in 2018. Mr. Riley has served as an industry advisor to KKR & Co. L.P., a leading global investment firm from 2013 to 2022, since 2013. Mr. Riley was an executive at Yahoo! Inc. from Jan 1999 to Sept. 2012 with roles including EVP, Americas and SVP & MD, EMEA Region. He joined Yahoo! when it acquired Log-Me-On.com, where he was the Co-Founder and Managing Member. Mr. Riley began his career as an investment banking analyst at Donaldson, Lufkin & Jenrette. Mr. Riley was a finalist for Ernst & Young’s Entrepreneur of the Year Award, Featured in Forbes 40 under 40 Ones to Watch and included three times in Billboard Magazine’s Power 100 list. Mr. Riley is a Trustee at St. Luke’s school, a former member of the advisory Board for the Entrepreneurship Department at the Wharton School and a member of the Executive Board of Boy Scouts of America, Connecticut Yankee Council. Mr. Riley received a B.S. in economics with concentrations in finance and entrepreneurial management from the Wharton School of the University of Pennsylvania. We believe that Mr. Riley’s broad experience as an executive and advisor across industries qualifies him to serve as our director.

Matt Plavan has served as our Chief Financial Officer since November 2023. Mr. Plavan brings 30 years of successful leadership and board governance experience in public and privately held companies within the ag-tech, medical device, cell therapy, and healthcare industries, and is recognized for an ability to identify and capitalize on new market opportunities and follow-through execution of enterprise-wide growth initiatives. Most recently, from May 2022 to October 2023, Mr. Plavan served as Chief Executive Officer of IngredientWerks, Inc., having led the company’s founding spin-out from Agrivida, Inc. and initial seed financing to launch a leading molecular farming company specializing in the development of plant-based animal protein ingredients for the alternative protein and food ingredient markets. Prior to launching IngredientWerks, Mr. Plavan joined Arcadia Biosciences, Inc. (“Arcadia”) as Chief Financial Officer in September 2016 and served as President and Chief Executive Officer from September 2018 to December 2021, successfully leading Arcadia through the transition from an agricultural biotechnology trailblazer to a dynamic revenue generating consumer food products company targeting on-trend wellness and wheat-based ingredient categories with disruptive nutrition density. Prior to joining Arcadia, Mr. Plavan spent a decade with Cesca Therapeutics, Inc. (formerly known as ThermoGenesis Corp), his latest role serving as Chief Executive Officer and board member, successfully leading a transformational pivot from a medical device manufacturer to a high-value stem cell therapy company. As a Chief Financial Officer, Mr. Plavan also led the finances of two high-tech private equity backed companies, StrionAir Inc. and Reason, Inc., positioning each for successful exits. Previously, Mr. Plavan spent a half dozen years with McKesson Corporation, the oldest and largest healthcare company in the U.S., his latest role serving as Vice President of Finance for the health care information services division, iMcKesson. Mr. Plavan began his career with a six-year tenure at Ernst & Young, LLC. Mr. Plavan is a certified public accountant and earned a bachelor’s degree in business economics from the University of California, Santa Barbara.

Joshua Lee has served as our General Counsel and Secretary since June 2021. Mr. Lee joined Origin Operating as its Corporate Counsel in February 2018 and served as its General Counsel from December 2020 to June 2021. Mr. Lee has also served as Secretary of Origin Operating since February 12, 2020 and as Origin’s Secretary since June 2021. Prior to joining Origin Operating, Mr. Lee was an attorney at Miller Barondess, LLP from 2016 to 2018, and at Irell & Manella LLP from 2009 to 2016. Mr. Lee received a B.A. in Economics and German from the University of Southern California, an M.A. in Economics from the University of Southern California, and a J.D. from Yale Law School.

Nominees for Director

For a biography of Mr. Bissell, please see the section above titled “—Executive Officers.”

John Hickox joined the Company’s board of directors and was appointed Chair of the Audit Committee in March 2024 following a distinguished career spanning 40 years in auditing, accounting, FP&A, corporate governance, and executive leadership. Most recently, he assisted Kaizen Analytics, LLC in a contract COO capacity from June 2021 to April 2022. Mr. Hickox was a senior advisory partner at KPMG from May 2004 until he retired in September 2017, where he serviced a range of public clients (mid range to Fortune 10), including chemical and packaging industry clients, in the areas of Sarbanes-Oxley / regulatory compliance, internal audit / risk management, as well as spearheading the KPMG Americas Sustainability Practice, focusing on impactful corporate stewardship, strategy, reporting and profit maximization. From December 1997 to October 2002, Mr. Hickox served as an advisory partner at Ernst & Young where he served clients with their Internal Audit functions with a strong focus on operational improvement, as well as the lead partner on key accounts. Mr. Hickox received a B.B.A. in Accounting from Texas A&M University. We believe that Mr. Hickox’s

experience in auditing, accounting, FP&A, corporate governance, and executive leadership, including advising companies in the chemical packaging industries, qualifies him to serve as our director.

Jim Stephanou has served on Origin's board of directors since June 2023. Mr. Stephanou is Chief Executive Officer for IPS (Integrated Project Services) and brings over thirty years of experience in manufacturing operations and engineering, including his current role as CEO of IPS, an engineering and construction services provider to the life sciences sector. Previously, he served as Vice President and Global Head of Engineering at Merck & Co., Inc. ("Merck"), a position he held from 2015 to 2023. Prior to joining Merck, he held various leadership positions at Bayer Technology Services Americas for over a decade, including roles as Vice President of Asset Management, Vice President and Plant Manager for Manufacturing and Technology, and Regional Director of Engineering and Maintenance. Mr. Stephanou joined Lyondell Basell Industries N.V. in 1988 and held a variety of supervisory positions with the company before being named Manager of Maintenance and Reliability in 2000. Mr. Stephanou holds a mechanical engineering degree from Drexel University. We believe that Mr. Stephanou's experience in manufacturing operations and engineering qualifies him to serve as our director.

Continuing Directors

For a biography of Mr. Riley, please see the section above titled "—Executive Officers."

Pia Heidenmark Cook has served on Origin's board of directors since June 2021. Ms. Cook has also served as Chief Sustainability Officer at Ingka Group ("IKEA"), a holding company. Prior to this position, she served as head of Sustainability in IKEA Retail & Expansion for the IKEA Group from 2011 to 2017 and as head of Communications for the IKEA Foundation from 2008 to 2011. Prior to joining IKEA in 2008, Ms. Cook served as Vice President of Corporate Social Responsibility at the Rezidor Hotel Group from 2001 to 2008. Ms. Cook currently serves on the boards of Bupa, a health insurance company, MAX Burgers AB, a fast food company, and Decathlon SA, a sporting goods retailer. Ms. Cook also serves as senior advisor to Teneo, Eurazeo's Planetary Boundaries climate impact fund, and the DO Group. Ms. Cook has previously served as co-chair of The Retailers' Environmental Action Programme and as chairman of the tourism branch of the Prince of Wales Business Leaders Forum. Ms. Cook has received a Technical Licentiate degree and a M.Sc. in Environmental Management from the University of Lund, Sweden, and a M.Sc. in International Business Administration and Economics from Uppsala University, Sweden. We believe that Ms. Cook's extensive experience in sustainability and corporate social responsibility qualifies her to serve as our director.

William J. Harvey served as a member of Origin Operating's board of directors from June 2017 to June 2021 and as a member of Origin's board and the Chair of the Nominating and Governance Committee since June 2021. Mr. Harvey served from July 2009 to December 2016 as the President of DuPont Packaging & Industrial Polymers (P&IP), a global business unit of E. I. du Pont de Nemours & Company, Inc., a chemical company. Mr. Harvey became a member of the board of directors of Bridgestone Americas, Inc., the North American subsidiary of a Japanese multinational auto and truck parts manufacturer, in June 2017. Since March 2011, Mr. Harvey has served on the board of directors of Kennametal, Inc., a supplier of tooling and industrial materials. In March 2020, Mr. Harvey joined the Management Board of Huber Engineered Woods LLC, a manufacturer and supplier of wood products and a wholly-owned subsidiary of J.M. Huber Corporation. Since March 2021, he has been a member of the board of Clean Chemistry, Inc, a company owned by Black Bay Energy Capital. As a part of that assignment, Mr. Harvey sits on Black Bay's Advisory Board which reviews strategic investment opportunities. Mr. Harvey received an MBA from the Darden School at the University of Virginia and a B.S. in Economics from Virginia Commonwealth University. We believe that Mr. Harvey's broad experience as an executive and board member in the packaging and materials industries qualify him to serve as our director.

Kathleen B. Fish has served on Origin's board of directors since June 2021 and as Chair of the Compensation Committee since February 2023. Ms. Fish served as Chief Research, Development and Innovation Officer of Procter & Gamble, a consumer goods company, from February 2014 until December 2020. Prior to this, Ms. Fish served as vice president of the Global Fabric Care R&D organization at Procter & Gamble from January 2009 to January 2014, and as vice president of the Global Baby Care R&D organization at Procter & Gamble from November 2003 to November 2008. Ms. Fish joined Procter & Gamble in 1979 as part of its Product Development (R&D) organization. Ms. Fish is currently a member of the board of directors of USA Swimming and has served on the board of directors of Balchem, an industrial gas company, since June 2021. Ms. Fish received a B.S. in Chemical Engineering from Michigan State University. We believe that Ms. Fish's leadership experience in the consumer goods industry qualifies her to be on our board of directors.

Craig A. Rogerson served as a member of Origin's board of directors beginning on May 1, 2023 and will continue until the 2025 annual meeting of shareholders. Mr. Rogerson has four decades of executive experience leading private and publicly held specialty chemical companies. He served as Chairman, President and Chief Executive Officer of Hexion Inc., a leading global producer of adhesives and performance materials, from July 2017 until his retirement in January 2023. Hexion filed for Chapter 11 bankruptcy in April 2019 and reemerged from bankruptcy in July 2019. Previously, he served from December 2008 to April 2017 as Chairman, President and Chief Executive Office at Chemtura Corporation, a global

developer, manufacturer and marketer of engineered industrial specialty chemicals. Mr. Rogerson also served as President, Chief Executive Officer and Director of Hercules Incorporated, a global manufacturer of specialty chemicals, from December 2003 until November 2008. He has served as independent board chair of PPL Corporation, an electric utility company, since March 2021 and has served on the board of PPL Corporation since September 2005. He also currently serves on the boards of the Pancreatic Cancer Action Network and McLaren Northern Michigan Hospital. He also previously served on the boards of Ashland Global Holdings Inc., a chemicals manufacturer, from February 2019 to February 2021, the Society of Chemical Industry and the American Chemistry Council. Mr. Rogerson holds a chemical engineering degree from Michigan State University, and continues to serve on the Michigan State University College of Engineering Alumni board and on the advisory board of the Michigan State University Chemical Engineering & Materials Science Department. We believe that Mr. Rogerson is qualified to serve on our board of directors given his extensive leadership experience with manufacturing companies.

R. Tony Tripeny served as a member of Origin's board of directors and Chair of the Audit Committee beginning May 1, 2023. He was appointed Chair of Board on March 1, 2024. Mr. Tripeny brings over three decades of significant operational, strategy, and M&A experience, extensive knowledge of the manufacturing, technology, and materials science industries, and a background in international corporate finance. Since 2022, he has served as a director at Mesa Laboratories, Inc., a global leader in the design and manufacturing of life science tools and critical quality control solutions. During his career with Corning, Incorporated, a global leading innovator in materials science, Mr. Tripeny held various, progressive leadership roles in the areas of corporate accounting and finance, including Executive Vice President, Chief Financial Officer from September 2015 to February 2022 and Senior Vice President, Corporate Controller and Principal Accounting Officer from April 2009 to August 2015. He also served on the board of Hardinge Inc., a multi-national machine tool builder, from February 2012 to May 2018 and as a Financial Analyst for GKN Automotive Inc., an automotive technology company, from 1981 to 1985. Mr. Tripeny holds an economics degree from the University of Pennsylvania's Wharton School of Business and is a member of the Financial Executives Institute and the Institute of Management Accounting. We believe that Mr. Tripeny's leadership experience and knowledge of corporate finance qualify him to serve on our board of directors.

Board Leadership Structure

We believe that all members of our board of directors should have a voice in the affairs and the management of Origin. The board of directors believes that our stockholders are best served at this time by having a chairperson, who is an integral part of our board of directors structure and a critical aspect of effective corporate governance. Mr. Tripeny was appointed as chairperson of our board of directors, succeeding Karen Richardson, on March 1, 2024. Mr. Tripeny brings considerable skills and experience, as described above, to the role. While our Co-Chief Executive Officers have primary responsibility for preparing the agendas for meetings of our board of directors, our chairperson has significant responsibilities, which are set forth in our bylaws, and include, in part:

- Establishing the agenda for regular meetings of our board of directors;
- Coordinating with the committee chairs regarding meeting agendas and information requirements, and presiding over portions of meetings of our board of directors at which the evaluation or compensation of the Co-Chief Executive Officers is presented or discussed;
- Coordinating the activities of the other directors, and performing such other duties as our board of directors may establish or delegate from time to time; and
- Acting as principal liaison between the members of our board of directors and the Co-Chief Executive Officers.

The active involvement of our independent directors, combined with the qualifications and significant responsibilities of our chairperson and other directors, provide balance on our board of directors and promote strong, independent oversight of our management and affairs.

Role of the Board of Directors in Risk Oversight

One of the key functions of the board of directors is informed oversight of our risk management process. The board of directors does not anticipate having a standing risk management committee, but rather administers this oversight function directly through our board of directors as a whole, as well as through various standing committees of the board of directors that address risks inherent in their respective areas of oversight. In particular, the board of directors is responsible for monitoring and assessing strategic risk exposure and our Audit Committee has the responsibility to consider and discuss any major financial risk exposures and the steps our management will take to monitor and control such exposures, including guidelines and policies to govern the process by which risk assessment and management is undertaken. The

Audit Committee monitors compliance with legal and regulatory requirements. The Compensation Committee assesses and monitors whether our compensation plans, policies and programs comply with applicable legal and regulatory requirements.

Director Independence

Our common stock is listed on Nasdaq. Under the listing standards of Nasdaq, independent directors must comprise a majority of a listed company's board of directors, as affirmatively determined by the board of directors. In addition, the Nasdaq listing standards require that, subject to specified exceptions, each member of a listed company's Audit, Compensation, and Nominating and Corporate Governance Committees be independent. Under the Nasdaq listing standards, a director will only qualify as an "independent director" if, in the opinion of that listed company's board of directors, that director does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

Audit committee members must also satisfy the additional independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the Nasdaq listing standards. Compensation Committee members must also satisfy the additional independence criteria set forth in Rule 10C-1 under the Exchange Act and the Nasdaq.

Our board of directors has undertaken a review of the independence of each of our directors. Based on information provided by each director concerning his or her background, employment and affiliations, our board of directors has determined that each of Messrs. Dorer, Drucker, Harvey, Hickox, Rogerson, and Tripeny and Mses. Cook, Fish, and Richardson qualifies as "independent" as defined under the applicable Nasdaq rules. In making these determinations, our board of directors considered the current and prior relationships that each non-employee director has with the Company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. Messrs. Bissell and Riley are not deemed independent due to their positions as our Co-Chief Executive Officers.

Family Relationships

There are no family relationships between the board of directors and any of our executive officers.

Board Meetings and Committees

During our year ended December 31, 2023, our board of directors held six meetings (including regularly scheduled and special meetings). The Audit Committee met four times during the year ended December 31, 2023. The Compensation Committee met six times during the year ended December 31, 2023. The Nominating and Corporate Governance Committee met four times during the year ended December 31, 2023. Each director attended at least 75% of the aggregate of (i) the total number of meetings of our board of directors held during the period for which he or she has been a director and (ii) the total number of meetings held by all committees of our board of directors on which he or she served during the periods that he or she served.

Committees of the Board of Directors

The board of directors has established an Audit Committee, a Compensation Committee and a Nominating and Corporate Governance Committee. The composition and responsibilities of each of the committees of the board of directors are described below. Members serve on these committees until their resignation or until otherwise determined by the board of directors. The board of directors may establish other committees as it deems necessary or appropriate from time to time.

Audit Committee

The Audit Committee consists of John Hickox, Pia Heidenmark Cook, William J. Harvey, and Craig A. Rogerson. Our board of directors has determined that each member of the Audit Committee satisfies the independence requirements under Nasdaq listing standards and Rule 10A-3(b)(1) of the Exchange Act. The chair of the Audit Committee is John Hickox. Our board of directors has determined that Mr. Hickox is an “audit committee financial expert” within the meaning of SEC regulations. Each member of the Audit Committee can read and understand fundamental financial statements in accordance with applicable requirements. In arriving at these determinations, our board of directors has examined each Audit Committee member’s scope of experience and the nature of their employment.

The primary purpose of the Audit Committee is to discharge the responsibilities of the board of directors with respect to our corporate accounting and financial reporting processes, systems of internal control and financial statement audits, and to oversee our independent registered public accounting firm. Specific responsibilities of the Audit Committee include:

- helping the board of directors oversee corporate accounting and financial reporting processes;
- managing the selection, engagement, qualifications, independence and performance of a qualified firm to serve as the independent registered public accounting firm to audit our consolidated financial statements;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent accountants, our interim and year-end operating results;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing related person transactions;
- overseeing climate-related risks and opportunities and monitoring Origin’s compliance with Environmental Social Governance (“ESG”) and related legal and regulatory requirements impacting our accounting and financial reporting, including climate-related disclosures in our financial statements;
- obtaining and reviewing a report by the independent registered public accounting firm at least annually that describes our internal quality control procedures, any material issues with such procedures, and any steps taken to deal with such issues when required by applicable law; and
- approving or, as permitted, pre-approving, audit and permissible non-audit services to be performed by the independent registered public accounting firm.

Our Audit Committee operates under a written charter that satisfies the applicable rules and regulations of the SEC and the Nasdaq listing standards. A copy of the charter of our Audit Committee is available on our website at www.originmaterials.com under “Investors – Governance – Governance Documents.”

Compensation Committee

Our Compensation Committee consists of Kathleen B. Fish, Craig A. Rogerson, and Jim Stephanou. The Compensation Committee was previously chaired by Mr. Drucker until February 2023, at which point Ms. Fish succeeded Mr. Drucker as the chair of the Compensation Committee. Our board of directors has determined that each member of the Compensation Committee is independent under the Nasdaq listing standards and a “non-employee director” as defined in Rule 16b-3 promulgated under the Exchange Act.

The primary purpose of the Compensation Committee is to discharge the responsibilities of the board of directors in overseeing the compensation policies, plans and programs and to review and determine the compensation to be paid to executive officers, directors and other senior management, as appropriate. Specific responsibilities of the Compensation Committee will include:

- reviewing and approving the compensation of the Co-Chief Executive Officer, other executive officers and senior management;
- reviewing and recommending to the board of directors the compensation of directors;
- administering the equity incentive plans and other benefit programs;
- reviewing, adopting, amending and terminating incentive compensation and equity plans, severance agreements, profit sharing plans, bonus plans, change-of-control protections and any other compensatory arrangements for the executive officers and other senior management; and

- reviewing and establishing general policies relating to compensation and benefits of the employees, including the overall compensation philosophy.

Our Compensation Committee operates under a written charter that satisfies the applicable rules and regulations of the SEC and the Nasdaq listing standards. A copy of the charter of our Compensation Committee is available on our website at www.originmaterials.com under “Investors – Governance – Governance Documents.”

Compensation Committee Processes and Procedures

The Compensation Committee meets periodically throughout the year to, among other responsibilities, manage and evaluate our executive compensation program, and generally determines, which may be subject to final board of directors approval, the principal components of compensation (base salary, performance bonus awards, and equity awards) for our executive officers on an annual basis. Typically, the Compensation Committee will meet at least twice annually and with greater frequency if necessary. The Compensation Committee meets from time to time in executive session. In addition, from time to time, various members of management and other employees as well as outside advisors or consultants may be invited by the Compensation Committee to make presentations, to provide financial or other background information or advice or to otherwise participate in Compensation Committee meetings. The Compensation Committee does not delegate authority to approve executive officer compensation.

The Compensation Committee does not maintain a formal policy regarding the timing of equity awards to our executive officers and has not historically provided for annual refresh grants to executive officers each year but instead grants equity awards when it determines appropriate, which typically includes when an executive officer is hired or promoted and at other times the Compensation Committee determines appropriate for retention or other purposes. The Compensation Committee typically grants equity awards on regularly scheduled dates that occur once a quarter. The Compensation Committee will continue to evaluate its equity grant policies as we continue to evolve and grow as a public company.

The charter of the Compensation Committee grants the Compensation Committee full access to all books, records, facilities and personnel of the Company. Our Compensation Committee also works with and receives information and analyses from management, including within our legal, finance, and human resources departments, and our Co-Chief Executive Officers, and considers such information and analyses in determining the structure and amount of compensation to be paid to our executive officers, including our named executive officers. Our Co-Chief Executive Officers evaluate and provide to the Compensation Committee executive officer performance assessments and management’s recommendations and proposals regarding executive officer compensation programs and decisions affecting base salaries, equity compensation, and other compensation-related matters outside of the presence of any other named executive officers. However, our Compensation Committee retains the final authority to make all compensation decisions. While our Co-Chief Executive Officers discuss their recommendations with the Compensation Committee, neither may participate in, or be present during, any deliberations or determinations of the Compensation Committee regarding their respective compensation.

In addition, under the charter, the Compensation Committee has the authority to obtain, at the expense of the Company, advice and assistance from compensation consultants and internal and external legal, accounting or other advisors and other external resources that the Compensation Committee considers necessary or appropriate in the performance of its duties. The Compensation Committee has direct responsibility for the oversight of the work of any consultants or advisers engaged for the purpose of advising the Compensation Committee. In particular, the Compensation Committee has the sole authority to retain, in its sole discretion, compensation consultants to assist in its evaluation of executive and director compensation, including the authority to approve the consultant’s reasonable fees and other retention terms. Under the charter, the Compensation Committee may select, or receive advice from, a compensation consultant, legal counsel or other adviser to the Compensation Committee, other than in-house legal counsel and certain other types of advisers, only after taking into consideration six factors, prescribed by the SEC and Nasdaq, that bear upon the adviser’s independence; however, there is no requirement that any adviser be independent.

During the year ended December 31, 2023, after taking into consideration the six factors prescribed by the SEC and Nasdaq described above, the Compensation Committee engaged Meridian Compensation Partners (“Meridian”) as its compensation consultant. The Compensation Committee requested that Meridian:

- evaluate the efficacy of our existing compensation strategy and practices in supporting and reinforcing our long-term strategic goals; and
- assist in refining our compensation strategy to execute that long-term strategy.

As part of its engagement, Meridian developed and presented a comparative group of companies, performed analyses of competitive performance and compensation levels for that group, and presented recommendations to the Compensation

Committee for its consideration. Following an active dialogue with Meridian, the Compensation Committee approved the recommendations.

Nominating and Corporate Governance Committee

Our Nominating and Corporate Governance Committee consists of William Harvey, Pia Heidenmark Cook, Kathleen B. Fish, and John Hickox. The chair of the Nominating and Corporate Governance Committee is William Harvey. Our board of directors has determined that each member of the Nominating and Corporate Governance Committee is independent under the Nasdaq listing standards.

Specific responsibilities of the Nominating and Corporate Governance Committee include:

- identifying and evaluating candidates, including the nomination of incumbent directors for re-election and nominees recommended by stockholders, to serve on the board of directors;
- considering and making recommendations to the board of directors regarding the composition and chairmanship of the committees of the board of directors;
- overseeing and advising the board of directors on our goals, strategies, and commitments related to sustainability and ESG matters other than those impacting our accounting and financial reporting, including climate risks and opportunities, human rights and human capital management, community and social impact, and diversity and inclusion;
- developing and making recommendations to the board of directors regarding corporate governance guidelines and matters, including in relation to corporate social responsibility; and
- overseeing periodic evaluations of the performance of the board of directors, including its individual directors and committees.

Our Nominating and Corporate Governance Committee operates under a written charter that satisfies the applicable Nasdaq listing standards. A copy of the charter of our Nominating and Corporate Governance Committee is available on our website at www.originmaterials.com under “Investors – Governance – Governance Documents.”

Diversity of the Board of Directors

We believe our board should consist of individuals reflecting the diversity represented by our employees, customers, and communities in which we operate. The below Board Diversity Matrix provides the self-identified personal characteristics of our nine board members and nominees. Each of the categories listed in the matrix table has the meaning as it is used in Nasdaq Rule 5605(f).

Board Diversity Matrix

	As of March 8, 2024				As of June 8, 2023			
Total Number of Directors	9				9			
	Female	Male	Non-Binary	Did not Disclose	Female	Male	Non-Binary	Did not Disclose
Part I: Gender Identity								
Directors	2	7	—	—	3	6	—	—
Part II: Demographic Background								
African American or Black	—	1	—	—	—	1	—	—
Alaskan Native or Native American	—	—	—	—	—	—	—	—
Asian	—	—	—	—	—	—	—	—
Hispanic or Latino	—	—	—	—	—	—	—	—
Native Hawaiian or Pacific Islander	—	—	—	—	—	—	—	—
White	2	6	—	—	3	5	—	—
Two or more races or ethnicities	—	—	—	—	—	—	—	—
LGBTQ+	—	—	—	—	—	—	—	—
Did no disclose demographic background	—	—	—	—	—	—	—	—

Considerations in Evaluating Director Nominees

Our Nominating and Corporate Governance Committee uses a variety of methods for identifying and evaluating director nominees. In its evaluation of director candidates, our Nominating and Corporate Governance Committee will consider the current size and composition of our board of directors and the needs of our board of directors and the respective committees of our board of directors. Some of the qualifications that our Nominating and Corporate Governance Committee considers include, without limitation, issues of character, integrity, judgment, diversity, independence, area of expertise, corporate experience, length of service, potential conflicts of interest and other commitments. Nominees must also have the ability to offer advice and guidance to our Co-Chief Executive Officers based on past experience in positions with a high degree of responsibility and be leaders in the companies or institutions with which they are affiliated. Director candidates must have sufficient time available in the judgment of our Nominating and Corporate Governance Committee to perform all board of director and committee responsibilities. Members of our board of directors are expected to prepare for, attend, and participate in all board of director and applicable committee meetings. Other than the foregoing, there are no stated minimum criteria for director nominees, although our Nominating and Corporate Governance Committee may also consider such other factors as it may deem, from time to time, are in our and our stockholders' best interests.

Our board of directors believes that it should be a diverse body, and our Nominating and Corporate Governance Committee considers a broad range of backgrounds and experiences. In making determinations regarding nominations of directors, our Nominating and Corporate Governance Committee may take into account the benefits of diverse viewpoints. Our Nominating and Corporate Governance Committee also considers these and other factors as it oversees the annual board of director and committee evaluations. After completing its review and evaluation of director candidates, our Nominating and Corporate Governance Committee recommends to our full board of directors the director nominees for selection.

Stockholder Recommendations for Nominations to the Board of Directors

Our Nominating and Corporate Governance Committee will consider candidates for director recommended by stockholders, so long as such recommendations comply with our amended and restated certificate of incorporation and amended and restated bylaws and applicable laws, rules and regulations, including those promulgated by the SEC. Our Nominating and Corporate Governance Committee will evaluate such recommendations in accordance with its charter, our amended and restated bylaws, our policies and procedures for director candidates, as well as the regular director nominee criteria described above.

This process is designed to ensure that our board of directors includes members with diverse backgrounds, skills and experience, including appropriate financial and other expertise relevant to our business. Eligible stockholders wishing to recommend a candidate for nomination should contact our Secretary in writing. Such recommendations must include information about the candidate, a statement of support by the recommending stockholder, evidence of the recommending stockholder's ownership of our common stock and a signed letter from the candidate confirming willingness to serve on our board of directors. Our Nominating and Corporate Governance Committee has discretion to decide which individuals to recommend for nomination as directors.

Any nomination must comply with the requirements set forth in our bylaws and should be sent in writing to our Secretary at Origin Materials, Inc., 930 Riverside Parkway, Suite 10, West Sacramento, California 95605. To be timely for our 2025 annual meeting of stockholders, our Secretary must receive the nomination no earlier than January 2, 2025 and no later than February 1, 2025. In addition, stockholders who intend to solicit proxies in support of director nominees other than Origin's nominees must also comply with the additional requirements of Rule 14a-19(b).

Communications with the Board of Directors

Interested parties wishing to communicate with our board of directors or with individual members of our board of directors may do so by writing to our board of directors or to the particular members of our board of directors, and mailing the correspondence to our Secretary at Origin Materials, Inc., 930 Riverside Parkway, Suite 10, West Sacramento, California 95605. Our Secretary, in consultation with appropriate members of our board of directors as necessary, will review all incoming communications and, if appropriate, such communications will be forwarded to the appropriate member or members of our board of directors, or if none is specified, to the Chairperson of our board of directors.

Corporate Governance Guidelines and Code of Business Conduct and Ethics

Our board of directors has adopted Corporate Governance Guidelines that address items such as the qualifications and responsibilities of our directors and director candidates and corporate governance policies and standards applicable to us in general. In addition, our board of directors has adopted a Code of Business Conduct and Ethics that applies to all of our employees, officers and directors, including our Co-Chief Executive Officers, Chief Financial Officer, and other executive and senior financial officers. The full text of our Corporate Governance Guidelines and our Code of Business Conduct and Ethics is posted on the Corporate Governance portion of our website at www.originmaterials.com under "Investors – Governance – Governance Documents." We will post amendments to our Code of Business Conduct and Ethics or waivers of our Code of Business Conduct and Ethics for directors and executive officers on the same website.

Anti-Hedging and Pledging Policies

Our board of directors has adopted an Insider Trading Policy governing the purchase, sale, and/or other dispositions of the Company's securities by directors, officers and employees, that are reasonably designed to promote compliance with insider trading laws, rules and regulations, and listing standards applicable to the Company. Under our Insider Trading Policy, directors and executive officers, as well as other employees, are prohibited from engaging in the following activities with respect to the Company's common stock:

- Hedging their interest in Company shares by selling short or trading or purchasing "put" or "call" options on our common stock or engaging in similar transactions; and
- Pledging any shares of our common stock without prior clearance from our Corporate Compliance Officer as outlined in our Insider Trading Policy.

As of the date of this Proxy Statement, no shares of Company common stock were pledged by any director or executive officer.

Director Compensation

We have a non-employee director compensation policy pursuant to which our unaffiliated, non-employee directors are eligible to receive equity awards and annual cash compensation for service on our board of directors and committees of our board of directors. Pursuant to our non-employee director compensation policy, each non-employee director is entitled to a \$50,000 annual cash retainer. The members of the Audit Committee, Compensation Committee, and Nominating and Corporate Governance Committee are also entitled to an annual cash retainer of \$10,000, \$5,000, and \$5,000, respectively, other than the chair of each such committee, who is instead entitled to an annual cash retainer of \$20,000, \$15,000, and \$15,000, respectively. Each non-employee director may elect to forego receiving payment of all (but not less than all) of

the foregoing cash compensation and instead receive fully vested restricted stock units with an equivalent grant date fair value.

In addition to the cash compensation, each non-employee director who is first elected or appointed to the board of directors will also receive a one-time initial grant of restricted stock units with a grant date fair value of \$150,000, to vest in three equal installments on the first, second and third anniversary of the grant date. Any non-employee director who is first elected or appointed to the board of directors on a date other than an annual stockholder meeting of the Company will be granted an additional number of restricted stock units with a grant date fair value of \$130,000 (or, in the case of the chair of the board of directors, \$205,000), prorated to reflect the non-employee director's partial service between the last annual stockholder meeting preceding the non-employee director's election or appointment to the board of directors and the next annual stockholder meeting, and to vest in full on the earlier of the first anniversary of the grant date and the date of the Company's next annual stockholder meeting. Each non-employee director continuing to serve as a non-employee director following a stockholder meeting occurring after June 25, 2021 will also receive an annual grant of restricted stock units with a grant date fair value of \$130,000 (or, in the case of the chair of the board of directors, \$205,000). Each annual award will vest on the earlier of the first anniversary of the grant date and the Company's next annual stockholder meeting.

Each non-employee director may elect to defer the delivery of shares in settlement of any award of restricted stock units described above until the earlier of (i) the 60th day following the director's separation from continuous service on our board of directors and (ii) a change in control of the Company. Non-employee directors who reside outside the United States may, solely for non-U.S. tax planning purposes, elect to forego receiving the full (and not less than the full) annual grant and instead receive cash in an amount equal to the applicable grant date fair value of the annual grant. The cash will be delivered on the earlier of the first anniversary of the grant date and the date of the Company's next annual stockholder meeting following the award and the director making such a cash election must use the cash to purchase common stock of the Company as soon as reasonably practicable consistent with the Company's insider trading policy.

Each restricted stock unit and cash award described above is subject to the applicable director continuing to serve on our board of directors through the vesting date. In addition, each such award will become fully vested and, as applicable, due and payable immediately prior to the closing of a change in control of the Company, subject to the applicable director remaining in continuous service on the board of directors until the vesting date. Each member of the board of directors subject to the non-employee director compensation policy is required to acquire and hold shares of our common stock with a fair market value of at least \$250,000 (determined by the average closing price of a share of common stock for the later of (x) the 30 consecutive trading days preceding December 31, 2022 or (y) the 30 consecutive trading days preceding December 31st of the calendar year of such director's election or appointment to the board of directors) by the fifth anniversary of such director's election to the board of directors.

Director Compensation

The following table sets forth a summary of the compensation received by our non-employee directors during our year ended December 31, 2023:

Director	Fees Earned or Paid in Cash	Stock Awards ⁽¹⁾	Total
Bill Harvey ⁽²⁾	\$ 75,000	\$ 129,997	\$ 204,997
Kathleen B. Fish ⁽³⁾	68,764	129,997	\$ 198,761
Pia Heidenmark-Cook ⁽⁴⁾	65,000	—	65,000
Karen Richardson ⁽⁵⁾	50,000	204,999	254,999
Charles Drucker ⁽⁶⁾	26,739	—	26,739
Benno Dorer ⁽⁷⁾	26,415	—	26,415
R. Tony Tripeny ⁽⁸⁾	50,068	308,486	358,554
Craig Rogerson ⁽⁹⁾	43,392	308,486	351,878
Jim Stephanou ⁽¹⁰⁾	35,892	293,526	329,418
Boon Sim ⁽¹¹⁾	—	—	—
John Hickox ⁽¹²⁾	—	—	—

(1) The amounts reported in the Stock Awards column represent the grant date fair value of the annual restricted stock unit award that was granted under our 2021 Equity Incentive Plan ("2021 Plan") to each of our eligible non-employee directors during 2023 as computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718 Compensation Stock Compensation ("ASC 718"). Note that the amounts reported in the

column reflect the accounting cost for these stock awards, and do not correspond to the actual economic value that may be received by the named directors from the stock award.

- (2) As of December 31, 2023, Mr. Harvey held 158,734 stock options and 35,885 RSUs.
- (3) As of December 31, 2023, Ms. Fish held 35,885 RSUs.
- (4) Ms. Cook elected to receive a cash award in the amount of \$129,997 in lieu of her annual RSU grant that vests and is payable on the earlier of one-year following the grant date and the 2024 annual meeting date, subject to her continued service. Ms. Cook is to use the cash she receives to purchase shares of the Company's common stock. As of December 31, 2023, Ms. Cook held 6,803 RSUs.
- (5) As of December 31, 2023, Ms. Richardson held 52,664 RSUs. Ms. Richardson stepped down from the Company's board of directors effective March 1, 2024, and her then-outstanding and unvested RSUs were forfeited on that date without consideration.
- (6) Mr. Drucker stepped down from the Company's board of directors effective February 1, 2024.
- (7) Mr. Dorer stepped down from the Company's board of directors effective May 8, 2023, and his then-outstanding and unvested RSUs were forfeited on that date without consideration.
- (8) Mr. Tripeny elected to receive his quarterly retainer fees in RSUs in lieu of cash starting in the third quarter of 2023; \$37,499 of the amount included in "Fees Earned or Paid in Cash" was paid in 37,070 fully-vested RSUs for which Mr. Tripeny elected to defer the issuance of the common shares. As of December 31, 2023, Ms. Tripeny held 67,347 RSUs.
- (9) Mr. Rogerson elected to receive his quarterly retainer fees in RSUs in lieu of cash starting in the third quarter of 2023; \$32,499 of the amount included in "Fees Earned or Paid in Cash" was paid in 32,128 fully-vested RSUs for which Mr. Rogerson elected to defer the issuance of the common shares. As of December 31, 2023, Mr. Rogerson held 67,347 RSUs.
- (10) Mr. Stephanou elected to receive his quarterly retainer fees in RSUs in lieu of cash starting in the third quarter of 2023; \$32,499 of the amount included in "Fees Earned or Paid in Cash" was paid in 32,128 fully-vested RSUs during 2023 for which Mr. Stephanou elected to defer the issuance of the common shares. As of December 31, 2023, Ms. Stephanou held 59,882 RSUs.
- (11) Mr. Sim stepped down from the Company's board of directors effective March 13, 2023.
- (12) Mr. Hickox became a member of the board of directors on March 1, 2024. Therefore, he received no compensation during 2023.

Our directors who are also our employees receive no additional compensation for their service as directors. During our fiscal year ended December 31, 2023, John Bissell and Rich Riley were our employees. See the section titled "Executive Compensation" for additional information about the compensation paid to Messrs. Bissell and Riley.

**PROPOSAL NO. 1
ELECTION OF DIRECTORS**

Our board of directors is currently composed of nine members. In accordance with our amended and restated certificate of incorporation, our board of directors is divided into three staggered classes of directors. At the Annual Meeting, three Class III directors will be elected for a two-year term to succeed the three Class III directors whose term is then expiring. It is the Company's policy to invite directors and nominees for director to attend the Annual Meeting, including virtually if applicable. All of the directors attended the 2023 Annual Meeting of Stockholders except Mr. Hickox who was appointed to our board of directors on March 1, 2024.

Each director's term continues until the election and qualification of his or her successor, or such director's earlier death, resignation, or removal. Any increase or decrease in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of our directors. This classification of our board of directors may have the effect of delaying or preventing changes in control of our company.

Nominees

Our Nominating and Corporate Governance Committee has unanimously nominated, and our board of directors has approved, John Bissell, John Hickox, and Jim Stephanou as nominees for election as Class III directors at the Annual Meeting to hold office until the Company's 2026 Annual Meeting of Stockholders and until a successor is elected and qualified or, if sooner, until the director's death, resignation or removal. Mr. Bissell is our Co-Founder and Co-Chief Executive Officer. He was the Chief Executive Officer and a member of the board of directors of Origin Operating from its founding in November 2008 until the closing of the Business Combination in June 2021, and has continued to serve in both of these capacities since the closing of the Business Combination. Mr. Hickox was appointed to our board of directors on March 1, 2024. Mr. Stephanou joined our board of directors on June 12, 2023. If elected, Messrs. Bissell, Hickox, and Stephanou will serve as Class III directors until our 2026 annual meeting of stockholders. Each of the nominees is currently a director of our company. For information concerning the nominees, please see the section titled "Board of Directors and Corporate Governance."

If you are a stockholder of record and you sign your proxy card or vote by telephone or over the Internet but do not give instructions with respect to the voting of directors, your shares will be voted "FOR" the election of Messrs. Bissell, Hickox, and Stephanou. If any nominee becomes unavailable for election as a result of an unexpected occurrence, our board of directors may designate a substitute nominee, in which event the persons named in the enclosed proxy will vote for the election of such substitute nominee, unless our board of directors chooses to reduce the number of directors serving on our board of directors. Each person nominated for election has consented to being named as a nominee in this Proxy Statement and has agreed to serve if elected. We have no reason to believe that any nominee will be unable to serve.

Vote Required

For the election of directors, the three nominees receiving the most "FOR" votes from the holders of shares present in person or virtually or represented by proxy and entitled to vote on the election of directors will be elected. Only votes "FOR" will affect the outcome.

**THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR"
EACH OF THE NOMINEES NAMED ABOVE.**

PROPOSAL NO. 2
RATIFICATION OF APPOINTMENT OF
INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Our Audit Committee has appointed Deloitte & Touche LLP (“Deloitte”), independent registered public accountants, to audit our consolidated financial statements for our year ending December 31, 2024. During our year ended December 31, 2023, Deloitte & Touche LLP (“Deloitte”) served as our independent registered public accounting firm following the dismissal of Grant Thornton LLP in March 2023.

Notwithstanding the appointment of Deloitte and even if our stockholders ratify the appointment, our Audit Committee, in its discretion, may appoint another independent registered public accounting firm at any time during our fiscal year if our Audit Committee believes that such a change would be in the best interests of the Company and our stockholders. At the Annual Meeting, our stockholders are being asked to ratify the appointment of Deloitte as our independent registered public accounting firm for our fiscal year ending December 31, 2024. Our Audit Committee is submitting the appointment of Deloitte to our stockholders because we value our stockholders’ views on our independent registered public accounting firm and as a matter of good corporate governance. Representatives of Deloitte will be present at the Annual Meeting, and they will have an opportunity to make a statement and will be available to respond to appropriate questions from our stockholders.

If our stockholders do not ratify the appointment of Deloitte, our board of directors may reconsider the appointment.

Change in Independent Registered Public Accounting Firm

Dismissal of Grant Thornton LLP and Engagement of Deloitte & Touche LLP

The Audit Committee conducted an evaluation process to determine the Company’s independent registered public accounting firm for the fiscal year ending December 31, 2023. The Audit Committee, with the assistance of our management, evaluated several independent registered public accounting firms as part of this process, reviewing the qualifications, the independence and, if a firm was deemed to be qualified and independent to warrant further evaluation, the range of fees associated with their services.

On March 6, 2023, the Audit Committee approved the dismissal of Grant Thornton as our independent registered public accounting firm. Grant Thornton’s report on our consolidated financial statements as of and for the year ended December 31, 2022, which was included in our Annual Reports on Form 10-K for the fiscal years ended December 31, 2023 and 2022, and report on our internal control over financial reporting for the year ended December 31, 2022, which was included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, did not contain an adverse opinion or disclaimer of opinion and were not qualified or modified as to uncertainty, audit scope or accounting principles.

During the fiscal years ended December 31, 2023 and 2022, there were: (i) no disagreements within the meaning of Item 304(a)(1)(iv) of Regulation S-K between us and Grant Thornton on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which, if not resolved to Grant Thornton’s satisfaction, would have caused Grant Thornton to make reference thereto in Grant Thornton’s reports; and (ii) no “reportable events” within the meaning of Item 304(a)(1)(v) of Regulation S-K, except for the material weakness in our internal control over financial reporting previously reported in Part II, Item 9A “Controls and Procedures” in our Annual Report on Form 10-K for the year ended December 31, 2022.

During the audit of our consolidated financial statements for the fiscal years ended December 31, 2019 and December 31, 2020, during the course of preparing for our business combination, and during the second quarter 2021 and third quarter 2021 interim reviews, we identified a material weakness in our internal controls over financial reporting. As discussed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, we concluded that the identified material weakness has been remediated.

We previously provided Grant Thornton with a copy of the disclosures regarding the dismissal reproduced in this Proxy Statement and received a letter from Grant Thornton addressed to the SEC stating that they agree with the above statements. This letter was filed as an exhibit to our Current Report on Form 8-K filed with the SEC on March 9, 2023.

On March 6, 2023, the Audit Committee approved the appointment of Deloitte as our independent registered public accounting firm for the fiscal year ending December 31, 2023 based on an extensive review process considering, among other things, Deloitte’s ability to understand our business as its grows in scale and complexity.

Preceding the engagement of Deloitte, neither we nor anyone acting on our behalf consulted with Deloitte regarding either: (i) the application of accounting principles to a specified transaction, either completed or proposed; or the type of audit opinion that might be rendered on our financial statements, and neither a written report nor oral advice was provided

to us that Deloitte concluded was an important factor considered by us in reaching a decision as to the accounting, auditing or financial reporting issue; or (ii) any matter that was either the subject of a disagreement or a reportable event.

Principal Accounting Fees and Services

The following tables set forth the aggregate fees for professional audit services and other services rendered by Deloitte and Grant Thornton for the years ended December 31, 2023 and 2022.

Deloitte

	<u>2023</u>	<u>2022</u>
Audit Fees ⁽¹⁾	\$ 1,007,000	\$ —
Audit-Related Fees	—	—
Tax Fees	—	—
All Other Fees ⁽²⁾	64,000	500,000
Total Fees	<u>\$ 1,071,000</u>	<u>\$ 500,000</u>

Grant Thornton

	<u>2023</u>	<u>2022</u>
Audit Fees ⁽¹⁾	\$ 175,000	\$ 811,000
Audit-Related Fees	—	—
Tax Fees	—	—
All Other Fees	—	—
Total Fees	<u>\$ 175,000</u>	<u>\$ 811,000</u>

(1) “Audit Fees” consist of fees billed for professional services rendered in connection with the audit of our consolidated financial statements, reviews of our quarterly consolidated financial statements and related accounting consultations and services that are normally provided by the independent registered public accountants in connection with statutory and regulatory filings or engagements for those fiscal years.

(2) “All Other Fees” consists of fees billed for consulting services rendered in connection with tax incentives related to manufacturing site selection activities in 2022 and 2023.

In our year ended December 31, 2023, there were no other professional services provided by Deloitte and Grant Thornton that would have required our Audit Committee to consider their compatibility with maintaining the independence of Deloitte and Grant Thornton.

Audit Committee Policy on Pre-Approval of Audit and Permissible Non-Audit Services of Independent Registered Public Accounting Firm

The Audit Committee has adopted an Audit Committee Pre-Approval Policy for Services of the Independent Registered Accounting Firm, or the Policy, which sets forth the procedures and the conditions pursuant to which services proposed to be performed by the independent registered public accounting firm may be pre-approved. Under the Policy, all audit, audit-related and tax services to be provided by the independent registered public accounting firm are subject to pre-approval by the Audit Committee. In addition, the Policy authorizes the chairperson of the Audit Committee to pre-approve services not prohibited by the Policy to be performed by our independent registered public accounting firm and associated fees up to \$120,000, provided that the chairperson is required to report any decision to pre-approve such audit-related or non-audit services and fees to the full Audit Committee at its next regular meeting. All audit-related and non-audit related services performed by our independent registered public accounting firm in 2023 were pre-approved.

Vote Required

The ratification of the appointment of Deloitte as our independent registered public accounting firm requires the affirmative vote of a majority of the shares of our common stock present in person or by proxy at the Annual Meeting and entitled to vote on the matter. Abstentions will have the effect of a vote AGAINST the proposal and broker non-votes will have no effect.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” THE RATIFICATION OF THE APPOINTMENT OF DELOITTE & TOUCHE LLP.

REPORT OF THE AUDIT COMMITTEE

The Audit Committee currently consists of John Hickox, Pia Heidenmark Cook, William Harvey, Craig Rogerson, and Jim Stephanou, all of whom are non-management directors. R. Tony Tripeny was also a member of the Audit Committee for the relevant review and discussions of the Audit Committee prior to assuming the role of Chairman of the board on March 1, 2024. Mr. Hickox, who is currently Chair of the Audit Committee, was appointed to the board after the relevant review and discussions of the Audit Committee described above. Accordingly, and consistent with SEC guidance, the name of Mr. Hickox does not appear with the Audit Committee in this report.

The Audit Committee is a committee of the board of directors comprised solely of independent directors as required by the Nasdaq listing standards and rules and regulations of the SEC. The Audit Committee operates under a written charter approved by the board of directors, which is available on the company’s website at www.originmaterials.com under “Investors – Corporate Governance”. The composition of the Audit Committee, the attributes of its members and the responsibilities of the Audit Committee, as reflected in its charter, are intended to be in accordance with applicable requirements for corporate audit committees. The Audit Committee reviews and assesses the adequacy of its charter and the audit committee’s performance on an annual basis.

The Audit Committee has reviewed and discussed the audited financial statements for the year ended December 31, 2023 with management. The Audit Committee has discussed with the independent registered public accounting firm the matters required to be discussed by the applicable requirements of the Public Company Accounting Oversight Board (“PCAOB”) and SEC. The Audit Committee has received the written disclosures and the letter from the independent registered public accounting firm required by applicable requirements of the PCAOB regarding the independent accountants’ communications with the Audit Committee concerning independence and has discussed with the independent registered public accounting firm the accounting firm’s independence.

Based on the foregoing, the Audit Committee recommended to the board of directors that the audited financial statements be included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2023 for filing with the SEC.

Respectfully submitted by the members of the Audit Committee of the board of directors:

R. Tony Tripeny
Pia Heidenmark Cook
William Harvey
Craig Rogerson
Jim Stephanou

This report of the Audit Committee is not “soliciting material,” is not deemed “filed” with the SEC and is not to be incorporated by reference in any of our filings under the Securities Act of 1933, as amended, or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing, except to the extent specifically incorporated by reference herein.

PROPOSAL NO. 3

ADVISORY NON-BINDING VOTE TO APPROVE THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS

Under Section 14A of the Exchange Act, our stockholders are entitled to vote to approve, on a non-binding advisory basis, the compensation of our named executive officers as disclosed in this Proxy Statement in accordance with SEC rules. As described in detail under the heading “Executive Compensation,” our executive compensation program is designed to drive and reward performance and align the compensation of our named executive officers with the long-term interests of our stockholders. Please read the compensation tables and narrative disclosure that follow under the section titled “Executive Compensation” for information about our executive compensation program.

This proposal, commonly known as a “say-on-pay” proposal, gives our stockholders the opportunity to express their views on our named executive officers’ compensation as a whole. This vote is not intended to address any specific element of compensation, but rather the overall compensation of our named executive officers and the philosophy, policies, and practices described in this Proxy Statement. Our board and our Compensation Committee believe that these policies and practices are effective in implementing our compensation philosophy and achieving our compensation program goals.

At the 2022 annual meeting of stockholders, our stockholders indicated, by a non-binding advisory vote, that they agreed with our Board’s recommendation that we solicit a non-binding advisory vote on the compensation of our named executive officers, commonly referred to as “say-on-pay,” every year. Our Board has adopted a policy that is consistent with that preference and, accordingly, we are holding a say-on-pay vote at this annual meeting. A “say-on-frequency” vote is required at least every six years and, as such, our next say-on-frequency vote will be no later than 2028.

We are asking our stockholders to vote “FOR” the following resolution:

“RESOLVED, that Origin’s stockholders hereby approve, on an advisory non-binding basis, the compensation paid to Origin’s named executive officers, as disclosed in the company’s Proxy Statement for the 2024 Annual Meeting of Stockholders, pursuant to the compensation disclosure rules of the SEC, including in the compensation tables and the narrative discussions that accompany the compensation tables under the section titled ‘Executive Compensation.’”

Vote Required

The approval of this advisory non-binding proposal requires the affirmative vote of a majority of the voting power of the shares of our common stock present in person or by proxy at the Annual Meeting and entitled to vote on the matter. Abstentions will be considered votes present and entitled to vote on this proposal, and thus, will have the same effect as a vote “AGAINST.” Broker non-votes will have no effect on the outcome of this proposal.

As an advisory vote, the outcome of the vote on this proposal is not binding. However, our management team, our board, and our Compensation Committee, which is responsible for designing and administering our executive compensation program, value the opinions expressed by our stockholders, and will consider the outcome of this vote when making future executive compensation decisions.

OUR BOARD RECOMMENDS THAT YOU VOTE “FOR” THE APPROVAL, ON AN ADVISORY NON-BINDING BASIS, OF THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS, AS DISCLOSED IN THIS PROXY STATEMENT.

EXECUTIVE OFFICERS

The following table identifies certain information about our executive officers as of 3/8/2024. Our executive officers are appointed by, and serve at the discretion of, our board of directors. There are no family relationships among any of our directors or executive officers.

Name	Age	Position
John Bissell	38	Co-Chief Executive Officer and Director
Rich Riley	50	Co-Chief Executive Officer and Director
Matt Plavan	60	Chief Financial Officer
Joshua Lee	47	General Counsel

See the section titled “Directors, Executive Officers and Corporate Governance” for the biographies of each of our executive officers.

EXECUTIVE COMPENSATION

Summary Compensation Table

The following table sets forth information concerning the compensation of Origin’s named executive officers for the years ended December 31, 2023 and December 31, 2022, as applicable:

Name and Principal Position	Year	Salary	Bonus	Stock Awards ⁽¹⁾	All Other Compensation ⁽²⁾	Total
John Bissell.....	2023	\$ 300,000	\$ —	\$ 498,679	\$ 11,888	\$ 810,567
<i>Co-Chief Executive Officer</i>	2022	300,000	—	1,647,000	10,115	1,957,115
Rich Riley.....	2023	400,000	—	498,679	16,978	915,657
<i>Co-Chief Executive Officer</i>	2022	400,000	—	1,647,000	12,799	2,059,799
Matt Plavan ⁽³⁾	2023	61,026	—	1,367,186	2,529	1,430,741
<i>Chief Financial Officer</i>	2022	—	—	—	—	—
Joshua Lee.....	2023	211,827	—	249,339	11,062	472,228
<i>General Counsel, Secretary</i>	2022	211,827	—	741,150	1,314	954,291

- (1) Amounts reported represent the aggregate grant date fair value of RSUs and PSUs granted to such named executive officers during the fiscal years ended December 31, 2023 and 2022 under the 2021 Plan, as applicable, computed in accordance with ASC 718. The assumptions used in calculating the grant date fair value of the time-based RSUs reported in this column are set forth in Note 2 – Stock-Based Compensation to our audited consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2023. The grant date fair value for performance-based RSUs (“PSUs”) is reported based upon the probable outcome of the performance conditions. The value of the PSU awards granted in fiscal year 2023, assuming achievement of the maximum performance, would have been as follows: Mr. Bissell: \$139,980; Mr. Riley: \$139,980; Mr. Lee: \$69,990; and Mr. Plavan: \$74,999.
- (2) Consists of amounts for a phone and internet stipend and for health insurance, long-term disability insurance, and life insurance premiums paid on behalf of Messrs. Bissell, Riley, Plavan, Whaley, and Lee.
- (3) Mr. Plavan was appointed as the Chief Financial Officer of the Company on October 1, 2023, therefore no compensation was earned during 2022.

Outstanding Equity Awards as of December 31, 2023

The following table presents information regarding outstanding equity awards held by Origin's named executive officers as of December 31, 2023:

Name	Grant Date	Vesting Commencement Date	Option Awards		Option Exercise Price (\$)	Option Expiration Date	Stock Awards			
			Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable			Number of Shares or Units of Stock Have Not Vested (#)	Market Value of Shares of Stock That Have Not Vested (\$)	Equity incentive plan awards: number of unearned shares, units or other rights that have not vested (#)	Equity incentive plan awards: market or payout value of unearned shares, units or other rights that have not vested (\$)
John Bissell....	8/27/2015	3/25/2012	137,571	—	0.37	8/26/2025				
	10/28/2020	2/16/2021	798,086	1,106,740 (1)	0.14	10/27/2030				
	11/10/2021						17,007 (4)	14,218	193,750	161,975 (5)
	12/12/2022						200,000 (4)	167,200	—	—
	12/26/2023						450,000 (4)	376,200	150,000	125,400 (6)
Rich Riley.....	10/28/2020	10/28/2020	1,446,232	727,538 (2)	0.14	10/27/2030				
	11/10/2021						— (4)	—	193,750	161,975 (5)
	12/12/2022						200,000 (4)	167,200	—	—
	12/26/2023						450,000 (4)	376,200	150,000	125,400 (6)
Matt Plavan....	10/30/2023						1,101,983 (4)	921,258	—	—
	12/26/2023						241,105 (4)	201,564	80,368	67,188 (6)
Joshua Lee.....	4/9/2019	2/5/2018	16,931	—	1.21	4/8/2029	(3)			
	11/10/2021						22,676 (4)	18,957	48,438	40,494 (5)
	12/12/2022						90,000 (4)	75,240	—	—
	12/26/2023						225,000 (4)	188,100	75,000	62,700 (6)

(1) 529,119 shares underlying this option vest in equal monthly amounts over a period of four years on the same day of the month as the vesting commencement date and there were 154,327 shares remaining unvested as of December 31, 2023. The total of 529,119 shares subject to this option will have vested as of the fourth anniversary of the vesting commencement date, subject to Mr. Bissell's continued service at each vesting date. 211,647 shares underlying this option vest when the VWAP (as defined in the definitive agreement for the Business Combination) of a share of common stock of Origin equals or exceeds \$15.00 for 10 consecutive trading days during the three year period following the closing of the Business Combination, subject to Mr. Bissell's continued service at the date such milestone is achieved. 317,471 shares underlying this option vest when the VWAP of a share of common stock of Origin equals or exceeds \$25.00 for 10 consecutive trading days during the five year period following the closing of the Business Combination, subject to Mr. Bissell's continued service at the date such milestone is achieved. 423,295 shares underlying this option vest when the VWAP of a share of common stock of Origin equals or exceeds \$50.00 for 10 consecutive trading days during the five year period following the closing of the Business Combination, subject to Mr. Bissell's continued service at the date such milestone is achieved.

(2) 1/36th of the shares underlying this option vest each month on the same day of the month as the closing date of the Business Combination (and if there is no corresponding day, on the last day of the month), such that all of the shares subject to this option will have vested as of the third anniversary of the closing date of the Business Combination, subject to Mr. Riley's continued service at each vesting date. If Mr. Riley's employment is terminated by Origin for any reason other than cause (as defined in the 2020 Plan), then 12.5% of the total number of shares subject to this option shall immediately vest as of the date of such termination. If there is a change in control (as defined in the 2020

Plan) and if, during the period of time commencing forty-five (45) days prior to the consummation of such change in control and ending on the first anniversary of the consummation of such change in control, (i) Mr. Riley's services in all capacities as a service provider of Origin are involuntarily terminated without cause, or (ii) Mr. Riley resigns his service in all capacities as a service provider of Origin for good reason (as defined in the 2020 Plan), and in either case other than as a result of death or disability, and provided such termination constitutes a "separation from service" within the meaning of Treasury Regulation Section 1.409A-1(h), then, effective as of such separation, 100% of the then-unvested shares subject to this option as of such separation will become vested shares subject to this option. In addition, 110,000 shares underlying this option vested upon the completion of the Business Combination. 211,647 shares underlying this option vest when the VWAP of a share of common stock of Origin equals or exceeds \$15.00 for 10 consecutive trading days during the three year period following the closing of the Business Combination, subject to Mr. Riley's continued service at the date such milestone is achieved. 317,471 shares underlying this option vest when the VWAP of a share of common stock of Origin equals or exceeds \$25.00 for 10 consecutive trading days during the five year period following the closing of the Business Combination, subject to Mr. Riley's continued service at the date such milestone is achieved.

- (3) The shares underlying this option vested upon the completion of the Business Combination.
- (4) Reflects the grant of restricted stock units that vest ratably annually over three years from the grant date, subject to continuous service through each applicable vesting date.
- (5) Reflects the grant of PSUs with vesting to be evaluated by our Compensation Committee at various points between 2022 and 2027 based on certain construction and production milestones as well as certain revenue and EBITDA metrics associated with our Origin 1 and Origin 2 plants, respectively. If these milestones and metrics are achieved during the applicable performance period, as determined by our Compensation Committee, the eligible awards will become vested. Eligible awards are subject to a multiplier if multiple milestones and metrics are achieved during the applicable performance periods. This multiplier is capped at 3 and is subject to downward reduction by straight line interpolation for partial achievement of revenue and EBITDA metrics.
- (6) Reflects the grant of PSUs with vesting to be evaluated by our Compensation Committee as soon as practicable after the last day of fiscal 2024, but in any event no later than March 31, 2025 (the actual date of such determination is the "Certification Date"), based on certain cash balances as of December 31, 2024. The percentage of the maximum number of awards to be achieved ranges from 0% to 100%. One-third of the aggregate number of awards achieved shall vest on the later of January 1, 2025 and the Certification Date, and one-third shall vest on each of the one-and two-year anniversaries of January 1, 2025, subject to continuous service through each applicable vesting date.

Executive Compensation

Our Compensation Committee oversees the Company's compensation and benefit plans, policies and programs, and administration of Company equity plans, and reviews and determines the compensation of the Company's executive officers, directors, and senior management, as appropriate.

Other Features of Our Compensation Program

Employment Offer Letters

Each of our named executive officers is an at-will employee. Each named executive officer other than John Bissell, who is a co-founder of the company, is currently party to an offer letter setting forth his terms of employment as of the date of the offer letter, including title, initial salary, grant of initial equity award(s), eligibility to participate in our health and welfare benefit plans, and, for Mr. Riley only, his appointment to our board of directors. These individuals' base salaries and any equity awards are reviewed annually by the Compensation Committee. Please see the section titled "*Outstanding Equity Awards as of December 31, 2023*" for additional information regarding the equity awards held by our named executive officers.

John Bissell

John Bissell is the Company's Co-Chief Executive Officer. Mr. Bissell's current annual base salary is equal to \$300,000.

Rich Riley

Rich Riley is the Company's Co-Chief Executive Officer and is party to an offer letter dated October 28, 2020. Mr. Riley's current annual base salary is equal to \$400,000.

Matt Plavan

Matt Plavan is the Company's Chief Financial Officer and is party to an offer letter dated September 25, 2023. Mr. Plavan's current annual base salary is equal to \$350,000.

Joshua Lee

Joshua Lee is the Company's General Counsel and Secretary and is party to an offer letter dated January 9, 2018. Mr. Lee's current annual base salary is equal to \$290,000.

Clawback

In October 2023, our Compensation Committee adopted an incentive compensation recoupment policy that complies with Nasdaq's listing standards. The policy provides that, in the event we are required to prepare an accounting restatement, we will be required to recover incentive-based compensation received by any current or former executive officer based wholly or in part upon the attainment of a financial reporting measure that was erroneously awarded during the period of time specified in the recoupment policy. In addition, as a public company subject to the provisions of Section 304 of the Sarbanes-Oxley Act of 2002, if we are required as a result of misconduct to restate our financial results due to our material noncompliance with any financial reporting requirements under the federal securities laws, our Chief Executive Officer and Chief Financial Officer may be legally required to reimburse us for any bonus or other incentive-based or equity-based compensation they receive.

Potential Payments upon Severance and Change in Control

As of December 31, 2023, Rich Riley held 2,173,770 options to purchase common shares issued under Origin Operating's 2020 Equity Incentive Plan (the "2020 Plan"), granted on October 28, 2020. If Mr. Riley is terminated for any reason other than cause (as defined in the 2020 Plan), then 12.5% of the total number of shares subject to this option shall immediately vest as of the date of such termination.

Matthew Plavan received a one-time initial "Welcome" grant of 1,101,983 shares of RSUs under the Company's 2021 Equity Incentive Plan (the "2021 Plan"), and pursuant to the Company's then-current restricted stock agreement, and an "Annual" grant of 241,105 shares of RSUs. If Mr. Plavan is terminated for any reason except "Cause" (as defined by the 2021 Plan), he will become vested in shares equal to six months of his base salary and benefits coverage costs. If there is a "change-in-control" (as defined by the 2021 Plan), and Mr. Plavan is terminated for any reason except "Cause," then the unvested portion of his Welcome grant will be deemed to have vested immediately prior to his termination date.

In addition, in the event of a corporate transaction (as defined in the 2021 Plan), any equity awards granted to our named executive officers under our 2021 Plan, unless otherwise provided in the named executive officer's award agreement or other written agreement with us, that are outstanding and not assumed, continued or substituted for by any surviving or acquiring entity will be accelerated in full (or, for performance-based awards with multiple vesting levels depending on the level of performance, vesting will accelerate at 100% of the target level) effective as of a date prior to the effective time of the corporate transaction (contingent upon the effectiveness of the corporate transaction), subject to the executive officers' continuous service with the Company through the effective time of the corporate transaction.

Health and Welfare Benefits

Our named executive officers are eligible to participate in all of our benefit plans, including our medical, dental, vision, life, disability and accidental death and dismemberment insurance plans, and 401(k) plan, in each case generally on the same basis as other employees. We do not offer a pension plan or other qualified or non-qualified defined benefit or deferred compensation plans. Our Compensation Committee may elect to adopt such plans in the future if it determines that doing so is in our best interests.

Perquisites

We typically do not offer perquisites or personal benefits to our named executive officers other than telephone and internet stipends generally available to other employees; we may from time to time provide reasonable relocation or signing bonuses to our named executive officers as the Compensation Committee determines appropriate to assist such individuals to commence employment with us.

Tax and Accounting Considerations

As a general matter, the Compensation Committee reviews and consider, among other factors, the various tax and accounting implications of compensation programs we utilize.

Equity Compensation Plan Information

The following table summarizes our equity compensation plan information as of December 31, 2023. Information is included for equity compensation plans approved by our stockholders. We do not have any equity compensation plans not approved by our stockholders.

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	(b) Weighted Average Exercise Price of Outstanding Options, Warrants and Rights ⁽¹⁾ (\$)	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a))
Equity compensation plans approved by stockholders	23,024,114 ⁽¹⁾⁽²⁾	\$ 0.17 ⁽³⁾	35,644,147
Equity compensation plans not approved by stockholders	— ⁽⁴⁾	—	—
Total	23,024,114	\$ 0.17	35,644,147

(1) Includes the following plans: Origin Materials, Inc. 2021 Equity Incentive Plan, Origin Materials, Inc. 2021 Employee Stock Purchase Plan, Micromidas, Inc. 2020 Equity Incentive Plan and Micromidas, Inc. 2010 Stock Incentive Plan. For further detail on our equity compensation plans, please see Note 15 to our audited financial statements in our Annual Report on Form 10-K for the year ended December 31, 2023.

(2) This number includes 10,927,261 shares subject to RSUs.

(3) The weighted average exercise price relates solely to outstanding stock option shares since shares subject to the RSUs have no exercise price.

(4) We do not have any non-stockholder approved equity compensation plans.

Rule 10b5-1 Sales Plans

Our directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or executive officer when entering into the plan, without further direction from them. The director or executive officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material nonpublic information, subject to compliance with the terms of our insider trading policy.

Pay Versus Performance

The Securities and Exchange Commission (“SEC”) adopted a final rule that requires publicly traded companies to provide disclosure of the relationship between Compensation Actually Paid (“CAP”) by the company to its named executive officers and the company’s performance over a specified time period. Accordingly, we provide the following disclosure regarding executive compensation for our principal executive officers (“PEOs”) and non-PEO named executive officers (“Non-PEO NEOs”) and Company performance for the fiscal years listed below. The Compensation Committee did not consider the pay versus performance disclosure below in making its pay decisions for any of the years shown.

The following table presents the pay versus performance information for the named executive officers which have been calculated in a manner consistent with item 402(v) of Regulation S-K:

Year	Summary Compensation Total for PEOs ^(a)		Compensation Actually Paid to PEOs ^(b)		Average Summary Compensation Total for Non-PEO NEOs ^(a)	Average Compensation Actually Paid to Non-PEO NEOs ^(b)	Value of Initial Fixed \$100 Investment Based On:	
	John Bissell (\$)	Rich Riley (\$)	John Bissell (\$)	Rich Riley (\$)			Total Shareholder Return ^(c)	Net Income ^(d)
2023	810,567	915,657	(2,173,779)	(2,428,667)	951,484	494,410	8.37	23,798,000
2022	1,957,115	2,059,799	(1,330,584)	(941,438)	1,048,856	754,461	46.15	78,569,000
2021	2,423,220	2,125,881	3,560,830	7,480,090	2,076,560	1,335,130	64.56	42,090,000

(a) The amounts reflect the summary compensation table (“SCT”) totals for the PEOs and the average of the summary compensation totals for the Non-PEO NEOs. The PEOs and Non-PEO NEOs included in the columns reflect the following:

Year	PEOs	Non-PEO NEOs
2023	John Bissell, Rich Riley	Matt Plavan, Joshua Lee
2022	John Bissell, Rich Riley	Nate Whaley, Stephen Galowitz, Joshua Lee
2021	John Bissell, Rich Riley	Stephen Galowitz, Joshua Lee

(b) These columns represent the CAP by adjusting the named executive officer’s total compensation for certain amounts relating to equity awards, as follows:

Fair value or change in fair value, as applicable, of equity awards included in the CAP columns was determined by (i) RSU awards, closing price on applicable year-end dates or, in the case of vesting dates, the actual vesting price, (ii) PSU awards, the same valuation methodology as RSU awards above except year-end and vesting date values are multiplied by the probability of achievement as of each such date, (iii) stock options, the fair value calculated by a Monte Carlo simulation model as of the applicable year-end date(s) or, in the case of vesting date, the actual vesting price and probability of achievement.

For the portion of CAP that is based on year-end stock prices, the following prices were used: for 2023 \$0.84, 2022 \$4.61 and 2021 \$6.45.

	2023	
	John Bissell	Rich Riley
2023 “Compensation Actually Paid” to each PEO		
Total reported in 2023 SCT	\$ 810,567	\$ 915,657
Less: value of stock and option award reported in SCT	(498,679)	(498,679)
Plus: Year-end value of awards granted in 2023 that are unvested and outstanding as of the end of 2023*	446,738	237,738
Plus: Change in fair value (from prior year-end) of prior year awards that are outstanding and unvested as of the end of 2023*	(2,291,160)	(2,113,596)
Plus: Fair value as of the vesting date of awards that were granted and vested in 2023*	—	—
Plus: Change in fair value (from prior year-end) as of the vesting date of prior year awards that vested in 2023*	(641,244)	(969,787)
Less: Prior year fair value of prior year awards that failed to meet applicable vesting conditions in 2023*	—	—
Total adjustments	(2,984,345)	(3,344,324)
Compensation Actually Paid for fiscal year 2023	\$ (2,173,778)	\$ (2,428,667)

* The valuation assumptions used to calculate fair values did not materially differ from those disclosed at the time of grant.

The average “Compensation Actually Paid” to the Non-PEO NEOs

	2023
Average total reported in SCT	\$ 951,484
Less: Average value of stock and option award reported in SCT	(808,263)
Plus: Average year-end value of awards granted in the covered year that are unvested and outstanding as of the end of the covered year*	691,992
Plus: Average change in fair value (from prior year-end) of prior year awards that are outstanding and unvested as of the end of the covered year*	(212,620)
Plus: Average fair value as of the vesting date of awards that were granted and vested in the covered year*	—
Plus: Average change in fair value (from prior year-end) as of the vesting date of prior year awards that vested in the covered year*	(128,183)
Less: Average prior year fair value of prior year awards that failed to meet applicable vesting conditions in the covered year*	—
Total adjustments	(457,074)
Average Compensation Actually Paid	\$ 494,410

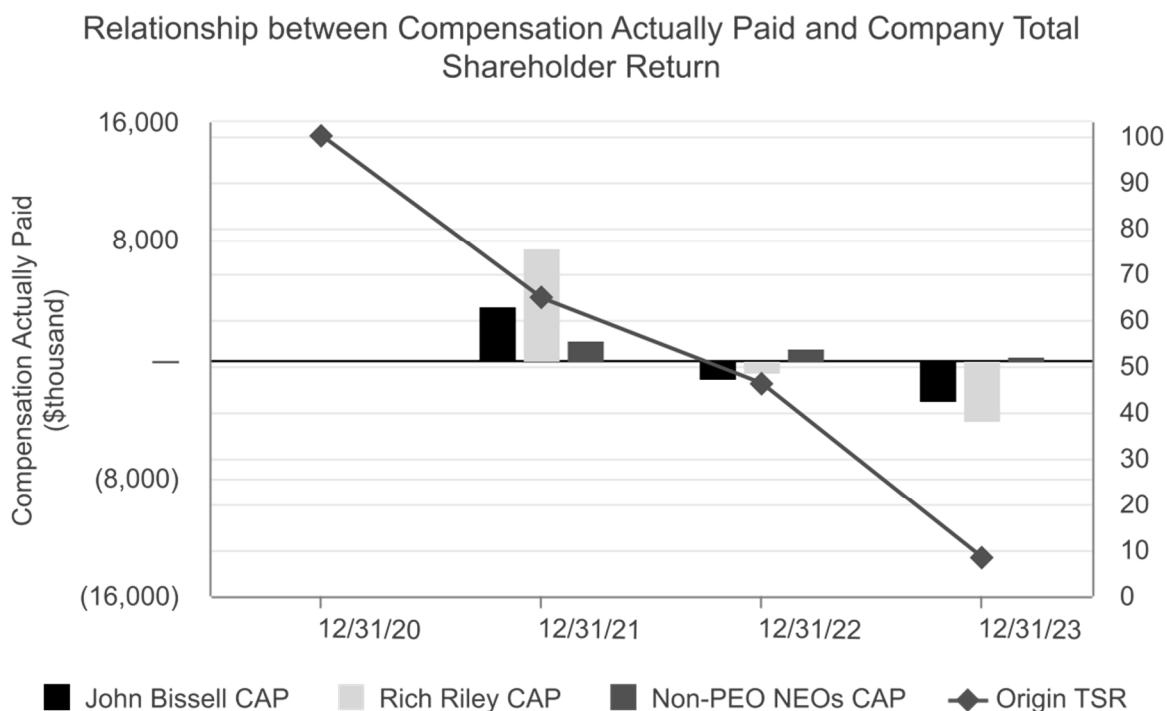
* The valuation assumptions used to calculate fair values did not materially differ from those disclosed at the time of grant.

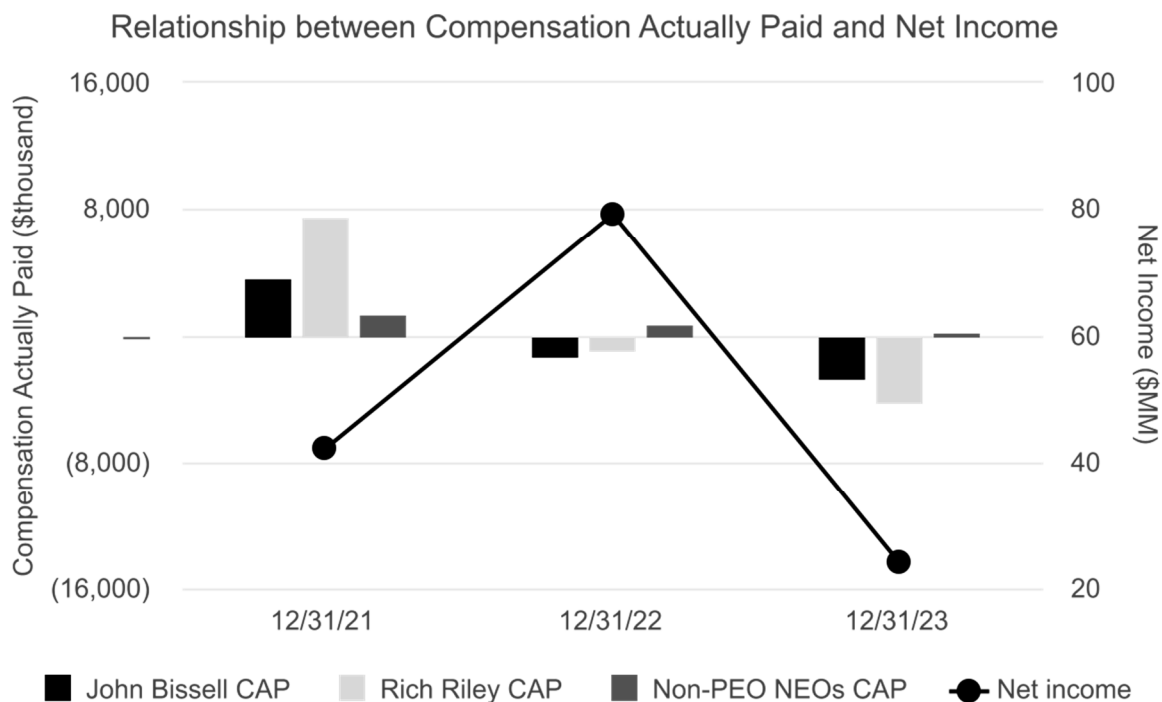
(c) Cumulative total shareholder return is calculated by dividing the sum of the cumulative amount of dividends for the measurement period, assuming dividend reinvestment, and the difference between our share price at the end and the beginning of the measurement period by our share price at the beginning of the measurement period. The beginning of the measurement period for each of the fiscal years in the table is December 31, 2020.

(d) Represents the amount of net income reflected in the Company’s audited financial statements for each applicable fiscal year.

Required Disclosure of the Relationship Between Compensation Actually Paid and Financial Performance Measures

The following graphs further illustrate the relationship between the pay and performance figures that are included in the pay versus performance tabular disclosure above.





All information provided above under the “Pay Versus Performance” heading will not be deemed to be incorporated by reference in any filing of the Company under the Securities Act of 1933, as amended, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The following table sets forth certain information with respect to the beneficial ownership of our capital stock as of March 4, 2024 for:

- each person or group of affiliated persons known by us to be the beneficial owner of more than 5% of our common stock;
- each of our named executive officers;
- each of our directors and nominees for director; and
- all of our current executive officers and directors as a group.

We have determined beneficial ownership in accordance with the rules and regulations of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Except as indicated by the footnotes below, we believe, based on information furnished to us, that the persons and entities named in the table below have sole voting and sole investment power with respect to all shares of our capital stock that they beneficially own, subject to applicable community property laws.

Applicable percentage ownership is based on 145,919,607 shares of our common stock outstanding as of March 4, 2024. In computing the number of shares of capital stock beneficially owned by a person and the percentage ownership of such person, we deemed to be outstanding all shares of our capital stock subject to options held by the person that are currently exercisable or exercisable within 60 days of March 4, 2024 and issuable upon the vesting of RSUs held by the person within 60 days of March 4, 2024. However, we did not deem such shares of our capital stock outstanding for the purpose of computing the percentage ownership of any other person.

Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Origin Materials, Inc., 930 Riverside Parkway, Suite 10, West Sacramento, California 95605. The information provided in the table is based on our records, information filed with the SEC and information provided to us, except where otherwise noted.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned
Greater than 5% Stockholders:		
Artius Acquisition Partners LLC ⁽¹⁾	15,826,667	10.1 %
Lior Amram ⁽²⁾	9,955,488	6.8 %
BlackRock, Inc ⁽³⁾	8,494,422	5.8 %
Named Executive Officers and Directors:		
John Bissell ⁽⁴⁾	1,899,071	1.3 %
Rich Riley ⁽⁵⁾	3,001,427	2.0 %
Matt Plavan	—	*
Joshua Lee ⁽⁶⁾	156,074	*
Pia Heidenmark Cook ⁽⁷⁾	64,035	*
Kathleen B. Fish ⁽⁸⁾	186,236	*
William J. Harvey ⁽⁹⁾	237,470	*
John Hickox ⁽¹⁰⁾	111,337	*
Craig A. Rogerson ⁽¹¹⁾	—	*
R. Tony Tripeny ⁽¹²⁾	73,000	*
Jim Stephanou ⁽¹³⁾	—	*
All executive officers and directors as a group (11 persons) ⁽¹⁴⁾	5,728,650	3.9 %

* Represents beneficial ownership of less than one percent (1%) of the outstanding shares of our common stock.

(1) Includes (1) 4,500,000 shares of common stock held by Artius Acquisition Partners LLC (“Artius”) and (2) 11,326,667 shares of common stock issuable to Artius pursuant to warrants exercisable within 60 days of March 4, 2024. Boon Sim is a founding member of Artius and can exercise voting and investment power with respect to the common stock held by Artius, and may be deemed to beneficially own such shares. The principal business address for Artius is c/o Artius Acquisition Inc., 3 Columbus Circle, Suite 2215, New York, NY 10019.

- (2) Based solely on information set forth in a Schedule 13G/A filed with the SEC on February 7, 2024 by Lior I. Amram (“Mr. Amram”). Consists of (i) 33,843 shares of common stock held directly by Mr. Amram; (ii) 9,814,510 shares of common stock held by Evergreen InvestCo I, LLC (“Evergreen InvestCo I”); (iii) 59,373 shares of common stock held by JLA Construction LLC 401k Plan (“JLA Construction”); and (iv) 47,762 shares of common stock held by JLA Asset Management LLC (“JLA Asset Management”). Mr. Amram is the sole manager of each of Evergreen InvestCo I and JLA Construction, and the managing member of JLA Asset Management, and may be deemed to hold sole voting and dispositive power over the Common Stock shares held by these entities. With respect to the shares of Common Stock held by these entities, Mr. Amram disclaims beneficial ownership other than to the extent he may have a pecuniary interest therein, directly or indirectly. The principal business address for Mr. Amram is c/o Evergreen Financial, LLC, 551 Fifth Avenue, Suite 2100, New York, New York 10176.
- (3) Based solely on information set forth in a Schedule 13G/A filed with the SEC on January 29, 2024 by BlackRock, Inc. (“BlackRock”). Represents 8,494,422 shares of common stock, of which BlackRock has 8,338,039 sole voting power and 8,494,422 sole dispositive power. The Schedule 13G/A filed by BlackRock provides information as of December 31, 2023 and, consequently, the beneficial ownership of BlackRock may have changed between December 31, 2023 and March 4, 2024. The principal business address of BlackRock is 50 Hudson Yards, New York, NY 10001.
- (4) Consists of 919,321 shares of common stock held directly by Mr. Bissell and 979,750 shares of common stock issuable to Mr. Bissell pursuant to options exercisable within 60 days of March 4, 2024. Does not include 37,500 shares issuable upon the settlement of PSUs which have vested within 60 days of March 4, 2024 but remain subject to a holding period.
- (5) Consists of (i) 1,578,512 shares of common stock issuable to Mr. Riley pursuant to options exercisable within 60 days of March 4, 2024; (ii) 230,750 shares of common stock held directly by Mr. Riley; (iii) 449,083 shares of common stock held by Riley Investment Trust I; and (iv) 707,832 shares of common stock held by Richard J. Riley Separate Property Trust. Mr. Riley is sole trustee of each of Riley Investment Trust I and Riley Separate Property Trust and may be deemed to hold sole voting and dispositive power over the common stock shares held by Riley Investment Trust I and Riley Separate Property Trust. Does not include 37,500 shares issuable upon the settlement of PSUs which have vested within 60 days of March 4, 2024 but remain subject to a holding period.
- (6) Consists of 139,143 shares of common stock held directly by Mr. Lee and 16,193 shares of common stock issuable to Mr. Lee pursuant to options exercisable within 60 days of March 4, 2024. Does not include 9,375 shares issuable upon the settlement of PSUs which have vested within 60 days of March 4, 2024 but remain subject to a holding period.
- (7) Consists of 64,035 shares of common stock held directly by Ms. Cook. Does not include 18,361 shares of common stock that Ms. Cook has deferred for future issuance.
- (8) Consists of 157,154 shares of common stock held directly by Ms. Fish and 29,082 shares of common stock issuable to Ms. Fish pursuant to RSUs that will vest within 60 days of March 4, 2024.
- (9) Consists of 49,654 shares of common stock held directly by Mr. Harvey, 158,734 shares of common stock issuable to Mr. Harvey pursuant to options exercisable within 60 days of March 4, 2024 and 29,082 shares of common stock issuable to Mr. Harvey pursuant to RSUs that will vest within 60 days of March 4, 2024.
- (10) Consists of 111,337 shares of common stock held directly by Mr. Hickox.
- (11) Does not include 52,151 shares of common stock that Mr. Rogerson has deferred for future issuance or 29,082 shares of common stock issuable to Mr. Rogerson pursuant to RSUs that will vest within 60 days of March 4, 2024 that have been deferred for issuance.
- (12) Consists of 73,000 shares of common stock held directly by Mr. Tripeny. Does not include 57,093 shares of common stock that Mr. Tripeny has deferred for future issuance or 29,082 shares of common stock issuable to Mr. Tripeny pursuant to RSUs that will vest within 60 days of March 4, 2024 that have been deferred for issuance.
- (13) Does not include 45,173 shares of common stock that Mr. Stephanou has deferred for future issuance or 29,082 shares of common stock issuable to Mr. Stephanou pursuant to RSUs that will vest within 60 days of March 4, 2024 that have been deferred for issuance.
- (14) Includes shares beneficially held by the named executive officers and directors.

Certain Relationships and Related Transactions, and Director Independence

Other than compensation arrangements for our directors and executive officers, which are described under the section titled “Executive Compensation” of this Proxy Statement, we did not enter into any transactions since January 1, 2022 to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed the lesser of \$120,000 or one percent of the average of our total assets at the end of our last two completed fiscal years; and
- any of our directors, executive officers or holders of more than 5% of any class of our capital stock, or any member of the immediate family of, or person sharing the household with, the foregoing persons, had or will have a direct or indirect material interest.

Indemnification Agreements

Our Certificate of Incorporation contains provisions limiting the liability of executive officers and directors, and the Bylaws provide that we will indemnify each of our executive officers and directors to the fullest extent permitted under Delaware law. The Certificate of Incorporation and the Bylaws also provide the board of directors with discretion to indemnify certain key employees when determined appropriate by our board.

We have entered into indemnification agreements with each of our directors and officers and certain other key employees. The indemnification agreements provide that we will indemnify each of our directors, executive officers, and other key employees against any and all expenses incurred by such director, executive officer, or other key employee because of his or her status as one of our directors, executive officers, or other key employees, to the fullest extent permitted by Delaware law, the Certificate of Incorporation and the Bylaws. In addition, the indemnification agreements provide that, to the fullest extent permitted by Delaware law, we will advance all expenses incurred by our directors, executive officers, and other key employees in connection with a legal proceeding involving his or her status as a director, executive officer, or key employee.

Policies and Procedures for Related Party Transactions

Our Audit Committee has the primary responsibility for reviewing and approving transactions with related persons. Our Audit Committee charter provides that our Audit Committee shall review and approve in advance any related person transactions. Our board of directors has adopted a formal written policy providing that officers, directors, holders of more than 5% of any class of our voting securities, and any member of the immediate family of and any entity affiliated with any of the foregoing persons, will not be permitted to enter into a related-party transaction with us without the prior consent of the Audit Committee, or other independent members of our board of directors in the event it is inappropriate for the Audit Committee to review such transaction due to a conflict of interest. Any request for us to enter into a transaction with an executive officer, director, principal stockholder, or any of their immediate family members or affiliates, in which the amount involved exceeds \$120,000, must first be presented to the Audit Committee for review, consideration, and approval. In approving or rejecting the proposed transactions, the Audit Committee will take into account all of the relevant facts and circumstances available.

All of the transactions described in this section prior to the consummation of the Business Combination were entered into prior to the adoption of this policy.

PROPOSAL NO. 4 APPROVAL OF REVERSE SPLIT

Our board of directors has adopted and deemed advisable, and is recommending that our stockholders approve, a proposed amendment to our amended and restated certificate of incorporation to effect a reverse stock split (the “Reverse Split”) of all of the outstanding shares of our common stock at a ratio of between one-for-five and one-for-thirty, with such ratio to be determined at the sole discretion of our board of directors and with such Reverse Split to be effected at such time and date, if at all, as determined by our board of directors in its sole discretion. The form of the proposed amendment to our amended and restated certificate of incorporation to effect the Reverse Split is attached as **Appendix A** to this Proxy Statement. However, the text of the proposed amendment is subject to revision to include such changes as may be required by the Secretary of State of the State of Delaware and as our board of directors deems necessary or advisable to effect the proposed amendment of our amended and restated certificate of incorporation.

By approving this proposal, stockholders will (i) approve a series of amendments to our amended and restated certificate of incorporation pursuant to which any whole number of outstanding shares between and including five and thirty would be combined into one share of our common stock and (ii) authorize our board of directors to file only one such amendment, as determined by our board of directors in the manner described herein and to abandon each amendment not selected by the board of directors. Our board of directors believes that stockholder approval granting our board of directors this discretion, rather than approval of a specified stock split ratio, provides our board of directors with maximum flexibility to react to then-current market conditions and, therefore, is in the best interests of the Company and its stockholders. Our board of directors may effect only one Reverse Split as a result of this authorization. Our board of directors may also elect not to do any Reverse Split. Our board of directors' decision as to whether and when to effect the Reverse Split will be based on a number of factors, including market conditions, existing and expected trading prices for our common stock, and the continued listing requirements of The Nasdaq Capital Market. Although our stockholders may approve the Reverse Split, we will not effect the Reverse Split if our board of directors does not deem it to be in the best interests of the Company and its stockholders. The Reverse Split will take effect, if at all, after it is approved by a majority of the total votes cast on this proposal, is deemed by the board of directors to be in the best interests of the Company and its stockholders, and after filing the amendment to our amended and restated certificate of incorporation with the Secretary of State of the State of Delaware. The total number of authorized shares of common stock will remain at 1,000,000,000, notwithstanding the Reverse Split.

Background

Our common stock is currently listed on The Nasdaq Capital Market. In order for our common stock to continue to be listed on The Nasdaq Capital Market, we must satisfy various listing maintenance standards established by Nasdaq. If we are unable to meet the applicable listing requirements, our common stock will be subject to delisting.

Under Nasdaq's continued listing requirements for The Nasdaq Capital Market, if the closing bid price of our common stock is under \$1.00 per share for 30 consecutive business days and does not thereafter reach \$1.00 per share or higher for a minimum of 10 consecutive business days during the 180 calendar days following notification by Nasdaq, our common stock would be subject to delisting by Nasdaq.

On January 4, 2024, we received a letter (the "Notice") from the Listing Qualifications staff of Nasdaq notifying us that for 30 consecutive business days preceding the date of the Notice, the closing bid price of our common stock was below \$1.00 per share, which is the minimum required closing bid price for continued listing on The Nasdaq Capital Market pursuant to Listing Rule 5550(a)(2) (the "Minimum Bid Price Requirement"). In accordance with Nasdaq Listing Rule 5810(c)(3)(A), Nasdaq has provided us with 180 calendar days, or until July 2, 2024, to regain compliance with the Minimum Bid Price Requirement. Accordingly, our board of directors adopted resolutions, subject to approval by our stockholders, to amend our amended and restated certificate of incorporation to effect the Reverse Split of our common stock at a ratio in the range of one-for-five to one-for-thirty with such ratio to be determined in the discretion of our board of directors. These resolutions were approved as a means of regaining compliance with the Minimum Bid Price Requirement.

Purpose of the Proposed Reverse Split

The board of directors' primary objective in proposing the Reverse Split is to raise the per share trading price of our common stock. The board of directors believes that the Reverse Split will result in a higher per share trading price, which is intended to enable us to maintain the listing of our common stock on The Nasdaq Capital Market and generate greater investor interest in the Company.

The board of directors believes that maintaining the listing of our common stock on The Nasdaq Capital Market is in the best interests of the Company and our stockholders. If our common stock were delisted from The Nasdaq Capital Market, the board of directors believes that such delisting could adversely affect the market liquidity of our common stock, decrease the market price of our common stock, adversely affect our ability to obtain financing for the continuation of our operations and result in the loss of confidence in our company.

If the Reverse Split is approved by our stockholders and implemented by the board of directors, we expect to satisfy the \$1.00 per share minimum bid price requirement for continued listing. However, despite the approval of the Reverse Split by our stockholders and implementation by the board of directors, there can be no assurance that the Reverse Split will result in our meeting and maintaining the \$1.00 minimum bid price requirement. The effect of the Reverse Split upon the market price for our common stock cannot be predicted, and the history of similar reverse stock splits for companies in like circumstances is varied. The market price per share of our common stock after the Reverse Split may not rise in proportion to the reduction in the number of shares of our common stock outstanding resulting from the Reverse Split due to, among other reasons, our performance and other factors that may be unrelated to the number of shares outstanding. The

common stock could also be delisted from The Nasdaq Capital Market due to our failure to comply with one or more other Nasdaq listing rules.

Effect on Outstanding Common Stock and Authorized Common Stock

The following table illustrates the effects of a one-for five, one-for-fifteen and one-for-thirty Reverse Split on our outstanding common stock as of March 4, 2024 (without giving effect to any adjustments for fractional shares):

	Prior to Reverse Split	1-for-5	1-for-15	1-for-30
Common Stock:				
Outstanding	145,919,607	29,183,921	9,727,974	4,863,987

The Reverse Split will affect all of our stockholders uniformly and will not materially affect any stockholder’s percentage ownership interests in our Company or proportionate voting power.

The amendment will not change the terms of our common stock. The shares of new common stock will have the same voting rights and rights to dividends and distributions and will be identical in all other respects to the common stock now authorized. The common stock issued pursuant to the Reverse Split will remain fully paid and non-assessable. The Reverse Split is not intended as, and will not have the effect of, a “going private transaction” covered by Rule 13e-3 under the Securities Exchange Act of 1934. We will continue to be subject to the periodic reporting requirements of the Securities Exchange Act of 1934.

Effect on Equity Awards and Warrants

If the Reverse Split is implemented, the number of shares of common stock subject to outstanding warrants issued by the Company, and the number of shares of common stock subject to outstanding options, restricted stock unit awards and other equity awards issued by the Company, and the number of shares reserved for future issuance and all other share limits, under the Company’s 2010 Stock Incentive Plan, 2020 Equity Incentive Plan, 2021 Equity Incentive Plan and 2021 Employee Stock Purchase Plan, will be reduced by the same ratio as the reduction in the outstanding shares, in each case rounded down to the nearest whole share. Correspondingly, the exercise price for individual outstanding options and warrants, on a per share basis, will be proportionally increased (i.e., the aggregate exercise price for all outstanding options and warrants will be unaffected (except for the rounding described below), but following a Reverse Split such exercise price will apply to a reduced number of shares), in each case rounded up to the nearest cent. As of March 4, 2024, there were outstanding stock options and warrants to purchase an aggregate of 5,465,755 and 35,476,627 shares of common stock, respectively, at a weighted average exercise price of \$0.17 and \$11.50 per share, respectively. Assuming, for example, a 1-for-10 Reverse Split, the number of shares covered by outstanding options will be reduced to one-tenth the number currently issuable, and the exercise price of outstanding options will be increased by 10 times the current exercise price, rounded up to the nearest cent.

No Fractional Shares

No fractional shares of common stock will be issued in connection with the Reverse Split. If as a result of the Reverse Split, a stockholder of record would otherwise hold a fractional share, one full share of Common Stock will be issued in lieu of the issuance of any such fractional share.

By approving the amendment to our amended and restated certificate of incorporation effecting the Reverse Split, stockholders will be approving the combination of any whole number of issued shares of our common stock between and including 5 and 30 shares into one share of common stock.

Accounting Matters

The par value of the shares of our common stock is not changing as a result of the implementation of the Reverse Split. Our stated capital, which consists of the par value per share of our common stock multiplied by the aggregate number of shares of our common stock issued and outstanding, will be reduced proportionately on the effective date of the Reverse Split. Correspondingly, our additional paid-in capital, which consists of the difference between our stated capital and the aggregate amount paid to us upon the issuance of all currently outstanding shares of our common stock, will be increased by a number equal to the decrease in stated capital. Further, net loss per share, book value per share and other per share amounts will be increased as a result of the Reverse Split because there will be fewer shares of common stock outstanding.

Possible Disadvantages of Reverse Split

Even though the board of directors believes that the potential advantages of the Reverse Split outweigh any disadvantages that might result, the following are some of the possible disadvantages of a Reverse Split:

- The reduced number of shares of our common stock resulting from a Reverse Split could adversely affect the liquidity of our common stock.
- A Reverse Split could result in a significant devaluation of our market capitalization and the trading price of our common stock, on an actual or an as-adjusted basis, based on the experience of other companies that have effected reverse stock splits.
- A Reverse Split may leave certain stockholders with one or more “odd lots,” which are stock holdings in amounts of less than 100 shares of our common stock. These odd lots may be more difficult to sell than shares of common stock in even multiples of 100. Additionally, any reduction in brokerage commissions resulting from the Reverse Split may be offset, in whole or in part, by increased brokerage commissions required to be paid by stockholders selling odd lots created by the Reverse Split.
- There can be no assurance that the market price per new share of our common stock after the Reverse Split will remain unchanged or increase in proportion to the reduction in the number of old shares of our common stock outstanding before the Reverse Split. For example, based on the closing market price of our common stock on March 4, 2024 of \$0.6020 per share of common stock, if the stockholders approve this proposal and the board of directors selects and implements a Reverse Split ratio of 1-for-10, there can be no assurance that the post-split market price of our common stock would be \$6.02 per share or greater. Accordingly, the total market capitalization of our common stock after the proposed Reverse Split may be lower than the total market capitalization before the proposed Reverse Split and, in the future, the market price of our common stock following the Reverse Split may not exceed or remain higher than the market price prior to the proposed Reverse Split.
- While the board of directors believes that a higher stock price may help generate investor interest, there can be no assurance that the Reverse Split will result in a per share price that will attract institutional investors or investment funds or that such share price will satisfy the investing guidelines of institutional investors or investment funds. As a result, the trading liquidity of our common stock may not necessarily improve.
- If the Reverse Split is effected and the market price of our common stock declines, the percentage decline may be greater than would occur in the absence of a Reverse Split. The market price of our common stock will, however, also be based on our performance and other factors, which are unrelated to the number of shares outstanding.

Procedure for Effecting Reverse Split

If our stockholders approve the Reverse Split, the Reverse Split would become effective at such time as it is deemed by our board of directors to be in the best interests of the Company and its stockholders and we file the amendment to our amended and restated certificate of incorporation with the Secretary of State of Delaware. Even if the Reverse Split is approved by our stockholders, our board of directors has discretion not to carry out or to delay in carrying out the Reverse Split. Upon the filing of the amendment, all of our old common stock will be converted into new common stock as set forth in the amendment.

As soon as practicable after the effective time of the Reverse Split, stockholders will be notified that the Reverse Split has been effected. If you hold shares of common stock in a book-entry form, you will receive a transmittal letter from our transfer agent as soon as practicable after the effective time of the Reverse Split with instructions on how to exchange your shares. After you submit your completed transmittal letter, a transaction statement will be sent to your address of record as soon as practicable after the effective date of the Reverse Split indicating the number of shares of common stock you hold.

If a stockholder is entitled to a payment in lieu of any fractional share interest, such payment will be made as described above under “No Fractional Shares.”

Criteria to be Used for Decision to Apply the Reverse Split

In the event that approval for the Reverse Split is obtained, our board of directors will be authorized to proceed with the Reverse Split. If our stock closes at a bid price equal to or greater than \$1.00 for the 10 business days prior to the Annual Meeting, our board of directors may delay its decision to execute the Reverse Split indefinitely. In that case, if at any time during the 12-month period following the Annual Meeting the stock price falls below \$1.00 for a 30-day period and therefore fails to comply with the applicable Nasdaq Capital Market minimum listing requirements, then the Reverse Split may be executed as a cure for this condition.

No Dissenter’s Rights

Under the Delaware General Corporation Law, our stockholders are not entitled to dissenter’s rights with respect to our proposed amendment to our amended and restated certificate of incorporation to effect the Reverse Split and we will not independently provide our stockholders with any such right.

Certain Material Federal Income Tax Consequences of the Reverse Split to U.S. Holders

The following summary describes certain material U.S. federal income tax consequences of the Reverse Split to certain U.S. Holders (as defined below) of our common stock, but does not purport to be a complete analysis of all potential tax effects. This discussion is based on provisions of the Internal Revenue Code of 1986, as amended (the “Code”), Treasury Regulations thereunder and administrative rulings, court decisions and other legal authorities related thereto, each as in effect as of the date of this proxy statement and all of which are subject to change or differing interpretations. Any such change or differing interpretation, which may or may not be retroactive, could alter the tax consequences to the stockholders described herein. This discussion is included for general informational purposes only and does not purport to consider all aspects of U.S. federal income taxation that might be relevant to a U.S. Holder. This summary, except for the discussion under “Information Reporting and Backup Withholding,” below is limited to stockholders who are U.S. Holders (as defined below).

The discussion below only addresses stockholders who hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally property held for investment). It does not address all aspects of U.S. federal income tax that may be relevant to a stockholder in light of such stockholder’s particular circumstances or to a stockholder subject to special rules, such as brokers or dealers in securities or foreign currencies, stockholders that are not U.S. Holders, regulated investment companies, real estate investment trusts, traders in securities who mark to market, banks, financial institutions or insurance companies, mutual funds, stockholders holding their stock through individual retirement or other tax-deferred accounts, tax-exempt organizations, stockholders holding their stock as “qualified small business stock” pursuant to Section 1202 of the Code or as Section 1244 stock for purposes of the Code, stockholders who acquired their stock in connection with the exercise of warrants, stock options or stock purchase plans or other employee plans or compensatory arrangements, stockholders whose functional currency is not the U.S. dollar, partnerships or other entities classified as partnerships or disregarded entities for U.S. federal income tax purposes (or persons holding our common stock through such entities), stockholders who hold their stock as part of an integrated investment (including a “straddle,” a pledge against currency risk, a hedge or other “constructive” sale or “conversion” transaction) comprised of shares of our common stock and one or more other positions, stockholders who exercise dissenters’ or appraisal rights, or stockholders who may have acquired their stock in a transaction subject to the gain rollover provisions of Section 1045 of the Code. In addition, this summary does not address any tax consequences other than certain U.S. federal income tax consequences of the Reverse Split, including the tax consequences of the Reverse Split under state, local or non-U.S. tax laws, or under estate, gift, excise or other non-income tax laws, the alternative minimum tax or the Medicare contribution tax on net investment income, the tax consequences of transactions effectuated prior or subsequent to, or concurrently with, the Reverse Split (whether or not any such transactions are consummated in connection with the Reverse Split) including, without limitation, the tax consequences to holders of options, warrants or similar rights to acquire our common stock.

For purposes of this discussion, a “U.S. Holder” means a beneficial owner of shares of our common stock that is any of the following:

- an individual who is a citizen or resident of the United States or someone treated as a U.S. citizen or resident for U.S. federal income tax purposes;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if (i) a U.S. court can exercise primary supervision over the trust’s administration and one or more “United States persons” (within the meaning of Section 7701(a)(30) of the Code) are authorized or have the authority to control all substantial decisions of the trust or (ii) it has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a United States person for U.S. federal income tax purposes.

If a partnership (including any entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds shares of our common stock, the tax treatment of a partner in the partnership generally will depend upon the status of the partner and the activities of the partnership. Partnerships holding our common stock and the partners therein should consult their tax advisors regarding the tax consequences to them of the Reverse Split.

Our view regarding the tax consequences of the Reverse Split is not binding with the Internal Revenue Service (“IRS”) or the courts. We have not sought, and do not intend to seek, any tax opinion from counsel or ruling from the IRS with respect to any of the statements made in this summary. There can be no assurance that the IRS will not take a position contrary to these statements or that a contrary position taken by the IRS would not be sustained by a court. Accordingly, each stockholder should consult with such stockholder’s own tax advisor with respect to all of the potential tax consequences to such stockholder of the Reverse Split.

STOCKHOLDERS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE REVERSE SPLIT ARISING UNDER U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Tax Consequences of the Reverse Split

We intend to treat the Reverse Split as a “recapitalization” for U.S. federal income tax purposes and that any rounding up of fractional shares to the next full share that may apply to a U.S. Holder will be solely to spare us the expense and inconvenience of issuing fractional shares and will not represent separately bargained for consideration paid to a U.S. Holder. As a result, a U.S. Holder generally should not recognize gain or loss upon the Reverse Split. A U.S. Holder’s aggregate tax basis in the shares of common stock received pursuant to the Reverse Split should equal the aggregate tax basis of the shares of common stock surrendered, and such U.S. Holder’s holding period for the shares of the common stock received should include the holding period for the shares of common stock surrendered. Treasury Regulations provide detailed rules for allocating the tax basis and holding period of the shares of common stock surrendered to the shares of common stock received in a recapitalization pursuant to the Reverse Split. U.S. Holders should consult their tax advisors as to application of the foregoing rules where shares of common stock were acquired at different times or at different prices.

The preceding discussion is intended only as a summary of certain material U.S. federal income tax consequences of the Reverse Split. It is not a complete analysis or discussion of all potential tax effects that may be important to a particular holder. All holders of our common stock should consult their own tax advisors as to the specific tax consequences of the Reverse Split for them, including record retention and tax-reporting requirements, and the applicability and effect of any federal, state, local and non-U.S. tax laws.

Vote Required

The affirmative vote of holders of a majority of the total votes cast on the proposal will be required to approve the amendment of our amended and restated certificate of incorporation to effect a Reverse Split of our common stock at a ratio in the range of one-for-five to one-for-thirty, such ratio to be determined in the discretion of our board of directors. Abstentions are not treated as votes cast and, therefore, will have no effect. We have been advised that the Reverse Split Proposal will be a discretionary proposal considered routine under the rules of the New York Stock Exchange, which generally controls the ability of brokers to vote or not vote shares held in street name on certain matters, and thus will not result in broker non-votes.

HOUSEHOLDING OF ANNUAL MEETING MATERIALS

The SEC has adopted rules that permit companies and intermediaries (such as banks and brokers) to satisfy the delivery requirements for proxy materials with respect to two or more stockholders sharing the same address by delivering a single copy of the Proxy Statement, Annual Report on Form 10-K or Notice of Internet Availability of Proxy Materials, as applicable, addressed to those stockholders. This process, which is commonly referred to as “householding,” potentially means extra convenience for stockholders and cost savings for companies. This year, a number of brokers with account holders who are our stockholders will be householding our proxy materials. A single Notice of Internet Availability of Proxy Materials will be delivered to multiple stockholders sharing an address unless contrary instructions have been received from the impacted stockholders. Once you have received notice from us (if you are a stockholder of record) or from your broker (if you are a beneficial owner) that we or they will be “householding” communications to your address, “householding” will continue until you are notified otherwise or until you revoke your consent. Upon oral or written request, we will deliver promptly a separate copy of the proxy materials to a stockholder at a shared address to which a single copy of proxy materials was delivered. If, at any time, you no longer wish to participate in “householding” and would prefer to receive separate proxy materials, including the Notice, or if you currently receive multiple copies and would like to request “householding” of your communications, please notify your broker or us. Direct your written request to us to Origin Materials, Inc., Attention: Investor Relations, 930 Riverside Parkway, Suite 10, West Sacramento, California 95605 or by telephone at (916) 231-9329. In the event a stockholder that received multiple copies would like to receive only one copy for such stockholder’s household, such stockholder should contact their bank, broker, or other nominee record holder, or contact us at the above address or phone number.

OTHER MATTERS

Fiscal Year 2023 Annual Report and SEC Filings

Our financial statements for our year ended December 31, 2023 are included in our Annual Report on Form 10-K. This Proxy Statement and our annual report are posted on our website at www.originmaterials.com under “Investors” and are available from the SEC at its website at www.sec.gov. You may also obtain a copy of our annual report without charge by sending a written request to Origin Materials, Inc., Attention: Investor Relations, 930 Riverside Parkway, Suite 10, West Sacramento, California 95605.

* * *

The board of directors does not know of any other matters to be presented at the Annual Meeting. If any additional matters are properly presented at the Annual Meeting, the persons named in the enclosed proxy card will have discretion to vote the shares of our common stock they represent in accordance with their own judgment on such matters.

It is important that your shares of our common stock be represented at the Annual Meeting, regardless of the number of shares that you hold. You are, therefore, urged to vote by telephone or by using the Internet as instructed on the enclosed proxy card or execute and return, at your earliest convenience, the enclosed proxy card in the envelope that has also been provided.

BY ORDER OF THE BOARD OF DIRECTORS



John Bissell
Co-Chief Executive Officer
West Sacramento, California
March 22, 2024

Rich Riley
Co-Chief Executive Officer
West Sacramento, California
March 22, 2024

Appendix A
FORM OF CERTIFICATE OF AMENDMENT OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF ORIGIN MATERIALS, INC.

Origin Materials, Inc. (the “*Company*”), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the “*DGCL*”), does hereby certify:

FIRST: The original Certificate of Incorporation of Origin Materials, Inc. was filed with the Secretary of State of the State of Delaware on June 24, 2021 under the name Origin Materials, Inc. (the “*Certificate of Incorporation*”) and effective at 5:15 p.m. on June 24, 2021.

SECOND: The Board of Directors of the Company (the “*Board*”), acting in accordance with the provisions of Sections 141 and 242 of the DGCL, adopted resolutions approving and deeming advisable an amendment to the Company’s Amended and Restated Certificate of Incorporation (the “*Restated Certificate*”), as follows:

Paragraph A of Article IV of the Restated Certificate is hereby amended and restated to read in its entirety as follows:

“A. The Company is authorized to issue two classes of stock to be designated, respectively, “*Common Stock*” and “*Preferred Stock*.” The total number of shares which the Company is authorized to issue is 1,010,000,000 shares, consisting of (i) 1,000,000,000 shares of Common Stock, having a par value per share of \$0.0001 and (ii) 10,000,000 shares of Preferred Stock, having a par value per share of \$0.0001.

Effective as of the effective time of 5:00 p.m., Eastern Time, on [***DATE***] (the “*Effective Time*”), each [five (5) / six (6) / seven (7) / eight (8) / nine (9) / ten (10) / eleven (11) / twelve (12) / thirteen (13) / fourteen (14) / fifteen (15) / sixteen (16) / seventeen (17) / eighteen (18) / nineteen (19) / twenty (20) / twenty-one (21) / twenty-two (22) / twenty-three (23) / twenty-four (24) / twenty-five (25) / twenty-six (26) / twenty-seven (27) / twenty-eight (28) / twenty-nine (29) / thirty (30)] shares of Common Stock issued and outstanding immediately prior to the Effective Time shall, automatically and without any action on the part of the Company or the respective holders thereof, be combined into one (1) share of Common Stock without increasing or decreasing the par value of each share of Common Stock (the “*Reverse Split*”); *provided, however*, no fractional shares of Common Stock shall be issued as a result of the Reverse Split and, in lieu thereof, upon receipt after the Effective Time by the exchange agent selected by the Company of a properly completed and duly executed transmittal letter, any stockholder who would otherwise be entitled to a fractional share of post-Reverse Split Common Stock as a result of the Reverse Split, following the Effective Time (after taking into account all fractional shares of post-Reverse Split Common Stock otherwise issuable to such stockholder), shall be entitled to one full share of post-Reverse Split Common Stock for such fractional share of Common Stock. The Reverse Split shall be effected on a record holder-by-record holder basis, such that any fractional shares of post-Reverse Split Common Stock resulting from the Reverse Split and held by a single record holder shall be aggregated.”

THIRD: Thereafter, pursuant to a resolution of the Board, this Certificate of Amendment was submitted to the stockholders of the Company for their approval, and was duly adopted in accordance with the provisions of Section 242 of the DGCL.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2023
OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____
Commission file number 001-39378

ORIGIN MATERIALS, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)
930 Riverside Parkway, Suite 10
West Sacramento, CA
(Address of principal executive offices)

87-1388928
(I.R.S. Employer
Identification No.)

95605
(Zip Code)

(916) 231-9329

Registrant's telephone number, including area code

Securities registered pursuant to Section 12(b) of the Act:

Title of each class:	Trading Symbol(s)	Name of each exchange on which registered:
Common Stock, \$0.0001 par value per share	ORGN	The NASDAQ Capital Market
Warrants	ORGNW	The NASDAQ Capital Market

Securities registered pursuant to section 12(g) of the Act:

Common Shares
(Title of class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of voting stock held by non-affiliates of the Registrant on June 30, 2023, based on the closing price of \$4.26 for shares of the Registrant's common stock as reported by the Nasdaq Capital Market, was approximately \$526.3 million. Shares of common stock beneficially owned by each executive officer, director, and holder of more than 10% of our common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The registrant had issued and outstanding an aggregate of 145,917,486 shares of common stock as of February 23, 2024.

Documents Incorporated by Reference

Specified portions of the registrant's definitive proxy statement to be issued in conjunction with the registrant's 2024 Annual Meeting of Stockholders, which is expected to be filed not later than 120 days after the registrant's fiscal year ended December 31, 2023 ("Proxy Statement"), are incorporated by reference into Part III of this Annual Report on Form 10-K (this "Annual Report"). Except as expressly incorporated by reference, the registrant's Proxy Statement shall not be deemed to be a part of this Annual Report.

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WHERE YOU CAN FIND MORE INFORMATION

Investors and others should note that we announce material financial information to our investors using our investor relations website, which can be found at <https://investors.originmaterials.com/>, as well as press releases, SEC filings, and public conference calls and webcasts. We also use the following social media channels as a means of disclosing information about the company, our products, our planned financial and other announcements and attendance at upcoming investor and industry conferences, and other matters and for complying with our disclosure obligations under Regulation FD:

Origin X (f/k/a Twitter) Account (<https://twitter.com/OriginMaterials>)

Origin LinkedIn Page (<https://www.linkedin.com/company/origin-materials>)

Origin Facebook Page (<https://www.facebook.com/people/Origin-Materials/100057468488825>)

These channels may be updated from time to time on Origin's investor relations website. The information we post through these channels may be deemed material. Accordingly, investors should monitor them in addition to following our investor relations website, press releases, SEC filings, and public conference calls and webcasts. This list may be updated from time to time. The information we post through these channels is not a part of this Annual Report on Form 10-K.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Origin Materials, Inc. (“the Company”, “Origin”, “we”, “us” and “our”) makes forward-looking statements in this Annual Report (this “Annual Report”) and in documents incorporated herein by reference. All statements, other than statements of present or historical fact included in or incorporated by reference in this Annual Report, regarding the Company’s future financial performance, as well as the Company’s strategy, future operations, financial position, estimated revenues, and losses, projected costs, prospects, plans and objectives of management are forward-looking statements. When used in this Annual Report, the words “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intends,” “may,” “might,” “plan,” “possible,” “potential,” “predict,” “project,” “should,” “will,” “would,” the negative of such terms and other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such identifying words. These forward-looking statements are based on management’s current expectations, assumptions, hopes, beliefs, intentions and strategies regarding future events and are based on currently available information as to the outcome and timing of future events. The Company cautions you that these forward-looking statements are subject to all of the risks and uncertainties, most of which are difficult to predict and many of which are beyond the control of the Company, incident to its business.

These forward-looking statements are based on information available as of the date of this Annual Report, and current expectations, forecasts and assumptions, and involve a number of risks and uncertainties. Accordingly, forward-looking statements in this Annual Report and in any document incorporated herein by reference should not be relied upon as representing the Company’s views as of any subsequent date, and the Company does not undertake any obligation to update forward-looking statements to reflect events or circumstances after the date they were made, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

As a result of a number of known and unknown risks and uncertainties, the Company’s actual results or performance may be materially different from those expressed or implied by these forward-looking statements. Some factors that could cause actual results to differ include:

- the effectiveness of the Company’s disclosure controls and procedures and internal control over financial reporting;
- the Company’s future financial and business performance, including financial projections and business metrics;
- changes in the Company’s strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects and plans;
- the Company’s ability to scale in a cost-effective manner;
- the Company’s ability to raise capital, secure additional project financing and secure government incentives;
- the Company’s ability to complete construction of its plants in the expected timeframe and in a cost-effective manner;
- the Company’s ability to procure necessary capital equipment and to produce its products in commercial quantities;
- the impact of laws and regulations and liabilities thereunder, including any decline in the value of carbon credits;
- the Company’s ability to procure and store necessary raw materials, works in process, and finished goods;
- any increases or fluctuations in raw material costs;
- the Company’s ability to avoid, mitigate, and recover from business and supply chain disruptions
- the ability to maintain the listing of the Company’s common stock on the Nasdaq Capital Market (“Nasdaq”); and
- the impact of worldwide economic, political, industry, and market conditions, global health crises, geopolitical instability, global supply chain disruptions, increased inflationary pressure, labor market constraints, bank failures, and other macroeconomic factors.

Other risks and uncertainties set forth in this Annual Report, including risk factors discussed in Item 1A under the heading, “Risk Factors”.

RISK FACTOR SUMMARY

The following risk factors summary and other information included in this Annual Report should be carefully considered. The summary risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not currently known to us or that we currently deem less significant may also affect our business operations or financial results. If any of the following risks actually occur, our stock price, business, operating results and financial condition could be materially adversely affected. For more information, see item 1A titled “Risk Factors” for more detailed descriptions of each risk factor.

- We are an early stage company with a history of losses and our future profitability is uncertain.
- We may not manage growth effectively.
- Our business plan assumes we can secure substantial additional project financing and government incentives, which may be unavailable on favorable terms, if at all.
- Construction of additional plants beyond Origin 1 may not be timely completed or completed in a cost-effective manner or at all. Any delays in or failure to complete the construction of additional plants could severely impact our business, financial condition, results of operations and prospects.
- We plan to rely on a limited number of plants to meet customer demand for our future intermediate chemical sales.
- We have not yet produced our products in large commercial quantities.
- We rely on a limited number of customers for a significant portion of our near-term revenue.
- Our industry is highly competitive, and we may lose market share to producers of products that can be substituted for our products, which may have an adverse effect on our results of operations and financial condition.
- Increases or fluctuations in the costs of our raw materials or other operating costs may affect our cost structure.
- We are dependent on third-party suppliers and service providers, some of which are sole source suppliers, who may fail to deliver raw materials or equipment or fail to supply needed services at all or according to schedules, prices, quality and volumes that are acceptable to us, or we may be unable to manage these supplies effectively.
- We have entered into and may in the future enter into collaborations, strategic alliances, or licensing arrangements, which expose us and our intellectual property to competitive risks and limitations associated with third-party collaborations and that may not produce the benefits we anticipate.
- Compliance with extensive environmental, health and safety laws could require material expenditures, changes in our operations or site remediation.
- Our business relies on proprietary information and other intellectual property, and our failure to protect our intellectual property rights could harm our competitive advantages with respect to the use, manufacturing, sale or other commercialization of our processes, technologies and products, which may have an adverse effect on our results of operations and financial condition.
- We may face patent infringement and other intellectual property claims that could be costly to defend, result in injunctions and significant damage awards or other costs (including indemnification of third parties or costly licensing arrangements, if licenses are available at all) and limit our ability to use certain key technologies in the future or require development of non-infringing products or technologies, which may cause us to incur significant unexpected costs, prevent us from commercializing our products and otherwise harm our business.
- We rely on trade secrets to protect our technology, and our failure to maintain trade secret protection could limit our ability to compete.
- Our management has limited experience in operating a public company.
- We previously identified a material weakness in our internal control over financial reporting that we have concluded has been remediated, though we may identify additional material weaknesses in the future or fail to maintain effective internal control over financial reporting, which may result in material misstatements of our consolidated financial statements or result in failure to meet our periodic reporting obligations.

Part I

Item 1. Business

Overview

Origin is an innovative materials company with a mission to enable the world's transition to sustainable materials. We have pioneered a technology that has the potential to replace petroleum-based materials with decarbonized materials in a wide range of end products, such as food and beverage packaging, clothing, textiles, plastics, car parts, carpeting, tires, adhesives, soil amendments, fuels, and more. We have also developed other products that can enhance sustainability, such as our 100% PET circular caps and closures that can enable fully-recyclable PET containers and reduce waste through light-weighting, while providing enhanced performance such as greater oxygen and CO₂ barrier properties that can increase shelf-life. These products complement our biomass conversion technology.

We were formerly known as Artius Acquisition Inc. ("Artius"). Artius was originally registered under the Companies Law of the Cayman Islands on January 24, 2020, as a special purpose acquisition company formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization, or other similar business combination with one or more target businesses. On June 25, 2021, we consummated a merger pursuant to that certain Agreement and Plan of Merger and Reorganization, dated as of February 16, 2021 (as amended by the letter agreement dated March 5, 2021, the "Merger Agreement"), by and among Artius, Zero Carbon Merger Sub Inc., a Delaware corporation and a direct, wholly owned subsidiary of Artius (the "Merger Sub"), and Micromidas, Inc., a Delaware corporation doing business as Origin Materials ("Legacy Origin"). Pursuant to the terms of the Merger Agreement, Artius effected a business combination with Legacy Origin through the merger of Merger Sub with and into Legacy Origin, with Legacy Origin surviving as the surviving company and as our wholly-owned subsidiary. We refer to this as the "Merger" and, collectively with the other transactions described in the Merger Agreement, the "Business Combination." In connection with the closing of the Business Combination (such time is referred to herein as the "Effective Time"), we changed our name to Origin Materials, Inc.

Unless the context indicates otherwise, references in this Annual Report to the "Company," "Origin," "we," "us," "our" and similar terms refer to Origin Materials, Inc. (f/k/a Artius Acquisition Inc.) and its consolidated subsidiaries (including Legacy Origin). References to "Artius" refer to the predecessor company prior to the consummation of the Business Combination.

We believe that our biomass conversion technology can help make the world's transition to "net zero" possible and support the fulfillment of greenhouse gas reduction pledges made by countries as part of the United Nations Paris Agreement as well as corporations that are committed to reducing emissions in their supply chains.

Our proprietary biomass conversion technology can use sustainable feedstocks such as sustainably harvested wood residues, agricultural waste, wood waste and even corrugated cardboard to produce materials and products that are currently made from fossil feedstocks such as petroleum and natural gas. The ability to use sustainable feedstocks that are not used in food production is one of the things that differentiates our biomass conversion technology from other sustainable materials companies that are limited to feedstocks used in food production such as vegetable oils or high fructose corn syrup and other sugars.

We believe that products made using Origin's biomass conversion technology at commercial scales will be able to compete directly with petroleum-derived products on both performance and price while being sustainable. Due to abundant and renewable wood supplies that have historically stable pricing, our cost of production when using these feedstocks is expected to be more stable than potential competing platforms that use other types of feedstocks. We believe that end products made at commercial scale using our biomass conversion technology and wood feedstocks will have a significant unit cost advantage over products made from other low carbon feedstocks.

Our chemicals can be converted into both "drop-in" materials and new materials with differentiated functional performance. The "drop-in" products are chemically fungible with those produced from petroleum-based raw materials, and therefore these "drop-in" products can be fed into existing supply chains without modification to the equipment or production processes of our customers.

Origin's capability to produce carbon negative materials is protected by an intellectual property portfolio comprised of over 40 patents as well as trade secrets covering non-discoverable aspects of Origin's critical manufacturing processes.

We have developed strong partnerships with large, brand-name corporations determined to transition to sustainable materials to help meet their emissions reduction goals. For example, in 2017, we founded the "NaturALL Bottle Alliance" with Danone and Nestlé Waters, with PepsiCo joining in 2018, to accelerate the development of innovative packaging

solutions made with 100% sustainable and renewable resources. Each member of the NaturALL Bottle Alliance has agreed to assist in establishing a supply chain for the production of the sustainable materials being developed by the NaturALL Bottle Alliance. Each member also agreed to provide technical equipment, resources, know-how and scientific skills necessary for the performance of the NaturALL Bottle Alliance's research and development program, and to be responsible for its own expenses. The members' agreements with us provided additional financial support for the research and development program and the commercialization of sustainable materials under development by the NaturALL Bottle Alliance. In addition to being customers, Danone, Nestlé and PepsiCo also invested in Origin. We have also significantly expanded our customer and partnership base over time to other industries, including relationships with Ford Motor Company, Mitsubishi Gas Chemical, PrimaLoft, Solvay, AECI, Stepan, Mitsui & Co., Packaging Matters, Minafin Group, LVMH Beauty, Mitsubishi Chemical Group, Kuraray, Revlon, ATC Plastics, Intertex, and others.

We also expect to accelerate the development of high-performance products through technology collaborations and joint development agreements, which are also referred to as service agreements, with current and prospective customers. In these relationships, we expect to supply expertise and materials, including products we manufacture at our Origin 1 plant, and our customer partner provides funding and its own expertise. Together, we work to test and establish market demand, product formulations, and specifications that meet the customer's needs in anticipation of that customer's purchase of commercial volumes of the co-developed product.

For example, we have created an all-PET (polyethylene terephthalate) closure, making "100% recycled PET" possible from cap to container to improve post-consumer recycling. Our PET caps and closures are more sustainable than common alternatives because they may be produced with any type of PET, from recycled PET to Origin's 100% bio-based, carbon-negative virgin PET. PET offers better oxygen and CO₂ barrier than HDPE and PP, common materials used in the production of caps.

Our vision for the future is the replacement of fossil-based feedstocks and materials with non-food, plant-based feedstocks and materials, while capturing carbon in the process. Our decarbonizing biomass conversion technology potentially addresses an estimated \$1.0 trillion dollar market opportunity, and we believe it can help revolutionize the production of a wide range of end products.

Our Biomass Conversion Technology

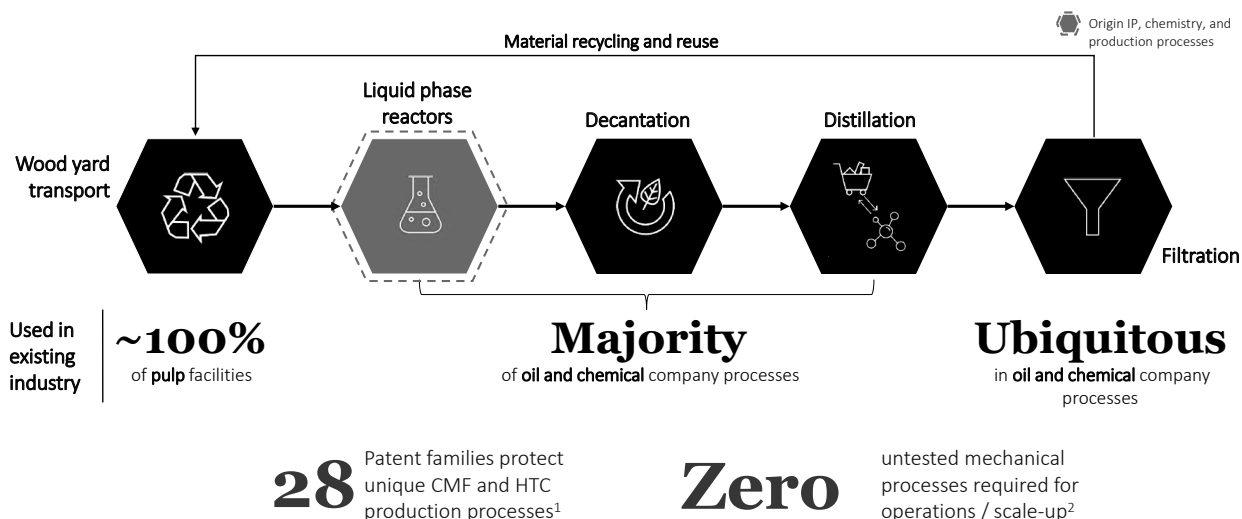
We have developed a proprietary biomass conversion technology to convert biomass, or plant-based carbon, into the versatile "building block" chemicals chloromethylfurfural ("CMF") and hydrothermal carbon ("HTC"), which we collectively refer to as Furanic Intermediates, as well as other oils and extractives and other co-products. Our biomass conversion technology is capable, using wood feedstocks, of producing CMF and HTC with a negative carbon impact. We believe these chemicals can replace petroleum-based inputs, lowering the carbon footprint of a wide range of materials without increasing cost or sacrificing performance.

CMF. CMF is a chemically flexible intermediate that can be converted into a variety of products, including paraxylene ("PX"), that can "drop in" to current supply chains to produce purified terephthalic acid ("PTA"), and subsequently polyethylene terephthalate ("PET"). Alternatively, CMF can be used to produce furandicarboxylic acid ("FDCA"), which can be converted into polyethylene furanoate ("PEF"). CMF and its derivatives can be used to produce numerous commodity and specialty chemicals. We have developed products made from CMF that can be used in applications such as food and beverage packaging and apparel and carpet fibers, and our product development pipeline includes applications such as adhesives, coatings and plasticizers.

HTC. HTC is a diverse, high-potential material. Current applications of our HTC include a drop-in, energy-dense solid fuel. HTC can also be calcined to produce a carbon-negative activated carbon for food and water treatment and filtration. Our HTC product development pipeline includes carbon black replacement for tires, foams and dyes, paint and coating applications, and agriculture and soil products. Notably, our carbon black has no detectable polyaromatic hydrocarbons, which are carcinogenic compounds found in carbon black produced from fossil feedstocks.

Our manufacturing process to produce CMF and HTC consists of front end feedstock handling, and subsequent liquid phase reaction with our catalyst mixture, followed by downstream separation processes to separate and purify CMF, HTC and other co-products, as described in the following diagram.

Origin is delivering transformational chemistry through mature, industry-standard equipment, materials, and technical processes



Oils and Extractives. An “oils and extractives” co-products stream is produced alongside our CMF and HTC. We have made progress toward development of new products and applications such as biofuels from this stream, which may be incorporated into the design of Origin 2 and future plants. We believe such cellulose-derived, low carbon intensity biofuels could potentially be used in transportation and marine fuel, industrial applications, and heat and power generation.

Market Opportunity

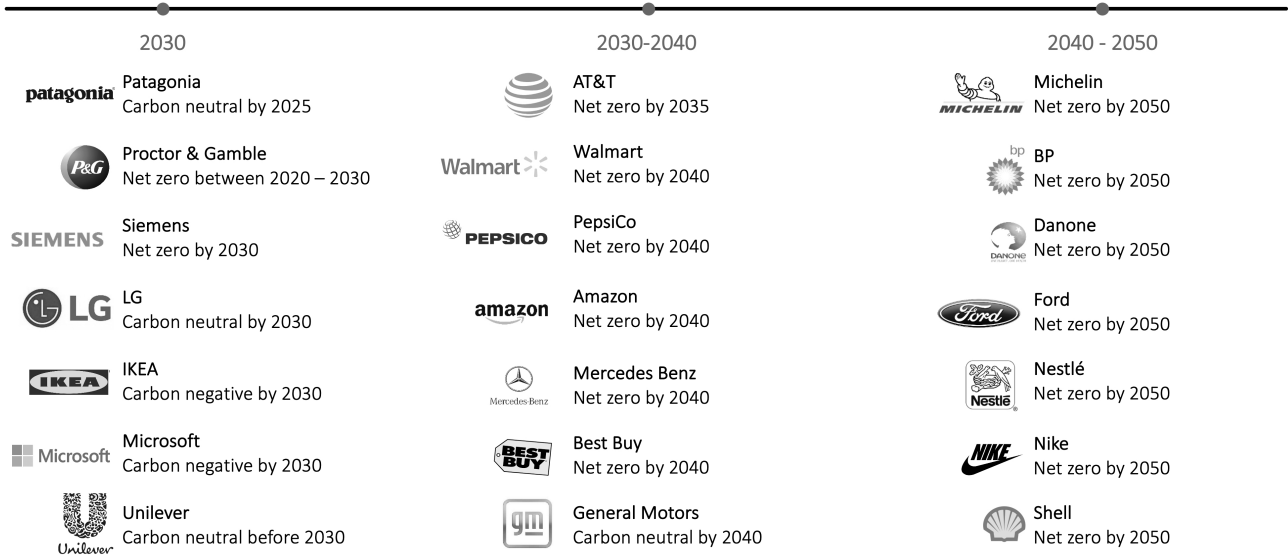
Global Decarbonization Commitments

We believe that increasing consumer awareness and growing governmental initiatives are driving a shift in the global community towards decarbonized materials. The UN Paris Agreement of 2015, joined by 194 countries and the European Union to date, includes commitments to limit the global average temperature increase by 2100 to well below 2°C compared to pre-industrial levels. To achieve this target, the UN estimated in 2019 that annual carbon dioxide (“CO₂”) emissions must be 15 gigatons lower than current nationally determined contributions imply.

Many companies have already pledged to achieve net zero carbon targets, with some aiming to achieve that target within the next decade. Despite the progress in the shift to renewable energy generation and electric vehicles, we believe that reducing emissions from energy use alone is insufficient to achieve the goals and commitments established by companies and governments. Consequently, in the near-term, we believe that these companies will need to integrate decarbonized materials into their supply chains.

Our vision for the future is to replace fossil-based feedstocks and materials with sustainably harvested wood and other non-food, sustainable feedstocks. As a tree grows, it consumes existing CO₂ from the atmosphere, and when it dies and decays, that CO₂ is released back into the atmosphere. However, through our proprietary manufacturing process, we convert the wood into manufacturing and feedstock materials, thereby capturing that CO₂.

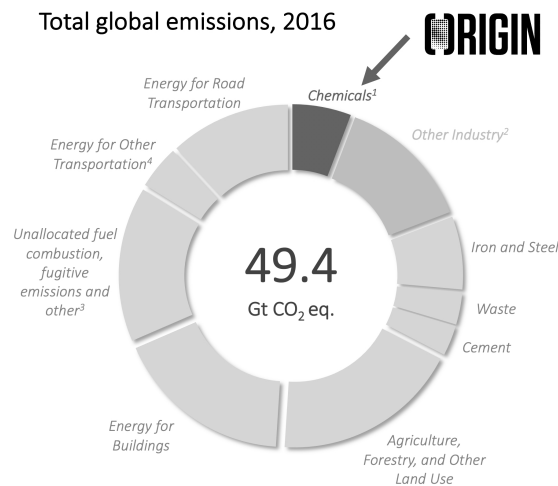
The graphic below highlights some of the notable companies that have made public commitments, either in the press or on their websites, to decarbonization and their respective decarbonization targets:



Note: Graphic not intended to represent that these are all Origin customers. Source: Press search and company websites. As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

Our Addressable Market

According to the International Energy Agency, the chemical sector is the largest industrial consumer of both oil and gas. Currently, organic chemicals are predominantly derived from fossil sources such as petroleum. These chemicals are used to produce a wide array of materials from paints to plastics, space suits to solar panels, and from medicines to electronics. According to a 2019 Barclays estimate, more than 10 million barrels of oil are consumed daily to create these materials, releasing massive quantities of new carbon into the atmosphere in the process. According to a 2018 report by The Association of Plastic Recyclers, for example, every kilogram of virgin fossil-PET has a life cycle global warming potential of 2.78 kilograms of carbon emissions. Our biomass conversion technology can enable companies to lower their overall CO₂ emissions and meet their emissions reduction commitments by substituting decarbonizing Furanic Intermediates and their derivatives for all or a portion of the fossil-based content of materials like PET in their supply chains.



Source: Origin Materials estimates (2020), Climate Watch (2020), the World Resources Institute (2020), ourworldindata.org.

At full commercial scale, our biomass conversion technology can produce carbon-negative and low carbon replacements for chemicals that have many potential applications. Origin's near-term and long-term addressable markets together exceed \$1.0 trillion.

\$65+ billion immediate opportunity - We expect our all-PET caps to begin to address a greater than \$65 billion global caps and closures market.

\$390+ billion near-term market focus. We believe our technology can serve near-term markets representing an aggregate market opportunity that we believe is over \$390 billion. These markets include polyesters for textiles, resin for packaging, solid fuels, activated carbon and carbon black for tires and polymer fillers.

\$750+ billion long-term market focus. Our biomass conversion technology produces versatile chemical "building blocks" that we anticipate, in the long term, can be converted into products to replace a broad range of chemicals and materials representing an addressable market that we believe is more than \$750 billion. These markets include paints, coatings, soil additives, advanced polyesters, epoxies, plasticizers, polyurethanes, elastomers, emulsions and solvents.

Competitive Landscape

We expect our products to compete with traditional, petroleum-based materials currently used in Origin's target markets, as well as compete with alternatives to these materials that both established and new companies seek to produce.

In our near-term markets, we expect to compete with global oil and petrochemical companies and large international diversified chemical companies. Several of these producers are seeking to develop materials from renewable sources that could compete with our products. Moreover, a number of established companies and new entrants have announced intentions to develop renewable alternatives for existing chemical products used in our near-term focus markets.

In addition to competition from producers of petroleum-based materials and renewable alternatives, we expect to face competition from recycled materials such as recycled PET ("rPET") in certain applications in our near-term focus markets. We do not believe that recycled materials will achieve the required scale and penetration to impact the market demand for our products before 2030 because recycling streams are significantly supply-constrained. We believe that improving the supply constraint for recycling will require substantial investments in infrastructure and fundamental changes to the existing entrenched governmental and institutional recycling systems and customer behavior and habits. Additionally, unless there are major changes to current technology and infrastructure, we believe that it will be difficult to implement 100% rPET material sourcing for many applications.

In the caps and closures market, we anticipate potential competition from other cap producers in the supply chain. At the same time, we believe there are opportunities for cooperation with these businesses to help commercialize and increase adoption of our all-PET caps and closures.

In our long-term focus markets, we expect to face competition from, among others, incumbents that include large chemical companies that continue to rely on petroleum-based feedstocks in their production processes.

Given our leading position in decarbonized materials, we also expect to compete with alternative technologies targeting different sources of emissions. These competitors include electric vehicles, renewable power generation, and food technology. While we do not anticipate competing directly for market share with producers of these technologies, we expect to compete for wallet share from customers looking to reduce overall carbon emissions throughout their supply chain and operations. In the long-term, once adoption of various technologies has increased and customers no longer have to prioritize different methods of reducing overall carbon emission, we expect only to compete against other materials producers.

Our Competitive Strengths

We believe that our biomass conversion technology can replace petroleum as the foundational feedstock for the materials economy. Our competitive strengths related to that technology, and to other Origin technologies, include:

- ***Flexible platform enables drop-in solutions serving a large addressable market.*** We believe that our biomass conversion technology is well-positioned to address a substantial global market that is just beginning to transition from petroleum-based materials to sustainable materials. Many of our products are drop-in replacements for traditional petrochemicals, enabling our customers to use our products in their existing manufacturing processes to produce chemically and physically identical end products with little to no change in customer behavior.

- ***Abundant, low-cost and historically price-stable feedstock.*** Our biomass conversion technology can use timber and forest residues such as pine pulpwood, which is currently abundant and renewable, as its base-case feedstock. The feedstock for the pulp industry in North America is plentiful and the cost has historically been relatively low and stable compared with the cost of oil. The market for these wood-based feedstocks tends to be local due to relatively high transport costs, and therefore is insulated from typical commodity price volatility. Furthermore, pulpwood feedstock does not compete for use as a food source, insulating products made from such feedstock from demand price pressures faced by other agricultural-based renewable feedstocks such as corn and sugarcane.
- ***Carbon Footprint.*** We believe our products can help enable prospective customers to achieve their net zero carbon emissions commitments by transitioning away from fossil-based materials towards materials made with our biomass conversion technology, which can use sustainable, non-food, plant-based feedstock.
- ***High Barriers to Entry.*** Over more than a decade, we have generated a robust patent portfolio as well as critical trade secrets. We believe our competitors now significantly lag behind us and will be unable to replicate the efficiency, yield and quality of our process, as we expect to continue to improve our existing technology and processes.
- ***Proprietary Packaging Solutions for Improved Recycling and Performance.*** Our patent-pending, cost-competitive caps and closure design and manufacturing innovation aids in producing “mono-material” products made with any type of PET, including recycled PET. These are typically easier to recycle than products made from multiple materials, and are highly sought-after for consumer packaged goods to improve recycling. Origin's all-PET caps offer improved performance compared with incumbent caps, enabling lighter cap weight and improved product shelf life.

Business Strategy

Our goal is to build a commercially successful business that can scale and meet current and future expected demand for carbon negative materials. As we advance and scale up our biomass conversion technology and other application development, we expect to introduce manufacturing capacity, which may include acquiring production lines or construction of chemical plants, that can produce sustainable materials and product applications. We also expect to continue to develop new materials and product applications, together with our partners, to maintain and increase its competitive advantage.

Inflationary pressures and global supply chain shocks during 2023 significantly increased major capital project costs including financing costs, building materials, labor, and manufacturing equipment. Together, these rising costs have significantly increased the funding requirements and time to completion of our planned manufacturing facilities.

In response to these cost pressures, we continue to evaluate alternative financing strategies for our capital project plans [including the build out of Origin 2], as well as opportunities to collaborate with well capitalized strategic partners committed to utilizing our biomass conversion technology to enable carbon advantaged materials manufacturing for their businesses. We believe the collective interest from these partners represents a viable source of funding to maintain forward momentum for our capital project plans, despite the inflationary cost environment.

Key elements of our strategy include:

Near-term revenue generation:

- We are focusing our available human and cash resources on developing near-term, recurring revenues through high value products like our all-PET caps and closures. We expect a majority of our near-term revenues to be derived from products sold into the caps and closures markets and other high value polymer product markets. Initial indications of demand expressed by prospective customers for our circular caps and closure solutions is sufficient for us to reach significant gross margin generation within twelve to twenty-four months and will not require us to raise additional equity capital for these initiatives. We expect to then use a portion of those profits to fund the further development of our biomass conversion technology and the requisite manufacturing capacity.

Operation of Origin 1 and development of Origin 2:

- Origin 1 is a strategic asset which we plan to use to qualify higher-value applications for our intermediates CMF and HTC. Origin 1 commenced commercial-scale production in October 2023. Origin 1 is not just to scale our technology, but to produce samples in higher volumes than produced at our pilot facilities.
- At scale, Origin 2 is intended to focus on supplying products that serve our markets of interest. Applications for CMF produced at Origin 2 are expected to include the FDCA-based polymers PEF and PETF for

advanced packaging, textiles, and other potential applications. As of December 31, 2023, Origin 2 remains in the project development stage. Our current strategy for carrying out that development work and constructing Origin 2 depends on near-term revenue from products like our all-PET caps and closures and our ability to secure substantial financial support from strategic partners.

Identify new and progress existing strategic partnerships to develop future plants and begin to address indicative demand for carbon-negative and low-carbon materials:

- We believe our agreements with customers and partners such as Ford Motor Company, Danone, Nestlé Waters, PepsiCo, Mitsubishi Gas Chemical, PrimaLoft, Solvay, Mitsui & Co., Ltd., Minafin Group, LVMH Beauty, Revlon, Mitsubishi Chemical Group, Kuraray, Intertex World Resources, ATC Plastics, and others indicate substantial and broad demand for the carbon-negative, low-carbon, and performance-advantaged materials that our biomass conversion technology is intended to produce. We believe that this demand represents a more than \$10 billion opportunity if we are able to supply the maximum volume of product our customers may purchase, or reserve for purchase, at the prices specified under these offtake agreements (including customer options that may or may not be exercised) and non-binding capacity reservations. That demand encompasses production from both Origin 1 and multiple future plants, some of which have not yet entered the project development stage and will require substantial additional capital. As such, we are focused on identifying strategic partners, and progressing our work with existing strategic partners, to facilitate the development work and support the construction costs necessary to bring Origin 2 and other future plants online and begin to address the indicative demand for our products.

Expand and develop new partnerships across the value chain:

- Our strategy includes, among other things, engaging procurement and engineering companies and entering into strategic partnerships for production, which would provide us with best-in-class capabilities to efficiently construct our plants and complete the production process. In addition, we expect to collaborate with partners who have the market knowledge and expertise to design compelling products and penetrate new markets. We believe that helping these partners build profitable new businesses and product lines using our cost-advantaged chemical intermediate platform enhances the value of our platform and promotes long-term committed customer relationships for an expanding and diversifying set of markets. We intend to continue using demand from industry-leading brands to motivate and align the intermediate supply chain to meet carbon reduction commitments.

Continue development of next-gen materials and applications:

- Our strategy focuses on developing low and negative carbon materials for use in a variety of products, including textiles and fabrics, next generation packaging, paints, coatings, and epoxies, fillers for tires and other rubber products, fuels, and agricultural products.
- Our CMF product focus is on low or negative carbon and performance advantaged polyesters. We intend to focus on improving polyesters with the incorporation of furanic content to make products such as “PETF” blended products, and we expect to focus on producing next generation high-performance polyesters with strong gas barrier and high heat resistance that can be fully recyclable with current technologies.
- Our HTC product focus is on energy-dense fuels. We intend to focus on developing carbon negative, carcinogen-free carbon black replacement for tires and other rubber and polymer filled materials. We also expect to focus on developing next generation agricultural products such as slow-release fertilizers as well as microbial and biologics delivery.

Develop new revenue streams through technology licensing:

- We have developed technologies to convert CMF and HTC into a variety of valuable end products, and expect to continue to develop these technologies. We expect, over time, to license this technology to relevant manufacturers of those end products while we supply the CMF and HTC to the licensees.

Our Products and Intermediates

Our products comprise both innovative applications like our sustainable all-PET caps and closures as well as versatile Furanic Intermediates such as CMF and HTC and several minority co-products, including levulinic acid, furfural, and an oils and extractives stream, depending on the specific feedstock we use.

PET - Caps & Closures:

- We have created an all-PET (polyethylene terephthalate) cap, making 100% recycled PET possible from cap to container to improve post-consumer recycling. Our PET caps enable greater sustainability and circularity than common alternatives because they may be produced with any type of PET, from recycled PET to Origin's 100% bio-based, carbon-negative virgin PET, all of which can be recycled together. Origin's all-PET caps offer improved performance compared with incumbent caps, enabling lighter cap weight and improved product shelf life.

CMF—chloromethylfurfural:

- CMF is an organic compound derived directly from cellulosic biomass through our patented process, consisting of furan substituted at the 2 and 5 positions with a formyl group and chloromethyl group. CMF is easily derivatized into multiple products including those for polyesters, nylons, epoxies, surfactants, and several others. Produced by Origin's process at full commercial scale, CMF is expected to have a low or negative carbon impact.

HTC—hydrothermal carbon:

- HTC is a carbonaceous composite consisting of furanic resin and lignin fragments. It is derived from ligno-cellulose through our patented process, and is a structured composite resin comprising furanic chemical groups that can be further functionalized or de-functionalized while retaining nano-scale morphology of the HTC. Via functionalization or de-functionalization, HTC may be further derivatized into products such as carbon black, activated carbon, as well as a variety of agricultural products. Produced by Origin's process at full commercial scale, HTC is expected to have a low or negative carbon impact.

Oils and Extractives:

- An “oils and extractives” co-products stream is produced alongside our CMF and HTC. We have made progress toward development of new products and applications such as biofuels from this stream, which may be incorporated into the design of Origin 2 and future plants. We believe such cellulose-derived, low carbon intensity biofuels could potentially be used in transportation and marine fuel, industrial applications, and heat and power generation.

Raw Materials Supply

Our biomass conversion technology can produce building block chemicals from a variety of abundant, low-cost bio-feedstocks including wood residues and wood processing waste. Our process was designed to be able to take advantage of idled and aging pulp mills and may be co-located with such mills to secure access to existing site-specific feedstock supplies and skilled labor while lowering required capital investment. We believe we will be able to contract for the necessary quantity and quality of these or suitable alternative feedstocks needed to manufacture products. We expect our demand for wood residues and wood processing waste in 2030 represents less than 1% of the world's total supply of these feedstocks and less than 0.5% of the global supply of suitable alternative feedstocks that can be used in our process, such as agricultural wastes, mixed paper waste, and construction wastes.

Research and Development

Our strategy depends upon both continued improvement of our biomass conversion technology and development of new chemical pathways, next-generation materials and product applications, and our research and development efforts are focused on supporting these two objectives. We operate an in-house laboratory and pilot-scale manufacturing facilities in West Sacramento, California and Sarnia, Ontario, Canada to conduct research and development work. Using its versatile biomass conversion technology, Origin has been developing commercialization pathways for higher-value applications for its intermediates CMF and HTC such as FDCA and carbon black, respectively. In addition, Origin is exploring product applications such as epoxies and resins, surfactants, bio-asphalt, fuel pellets, as well as biofuel and bio-solvents from an “oils and extractives” stream co-produced with CMF and HTC. In addition, we conduct joint research and development work with third parties including academic institutions, vendors, and other partners such as members of the NaturALL Bottle Alliance, carbon black co-development partners, cosmetics packaging partners, chemical manufacturers, textile manufacturers and suppliers, automotive companies, and partners focused on the development of advanced monomers and polymers such as FDCA and PEF.

Intellectual Property

Our patent portfolio is comprised of more than 40 patents focused on the conversion of biomass to CMF and HTC and downstream derivatives thereof. Origin intends to retain exclusive rights to commercially work its biomass to CMF and HTC pathways. We also rely on trade secrets, know-how and continuing technological innovation to develop and maintain our proprietary position.

Patents. As of February 8, 2024, we own 27 U.S. utility patents, 16 foreign patents, 7 pending U.S. non-provisional applications, and 10 pending international applications. We also own 3 pending U.S. design applications and 39 pending international design applications. The term of individual patents depends upon the legal term of the patents in countries in which they are obtained. In most countries, including the United States, the patent term is generally 20 years from the earliest date of filing a non-provisional patent application in the applicable country. In the United States, a patent's term may, in certain cases, be lengthened by patent term adjustment, which compensates a patent holder for administrative delays by the United States Patent and Trademark Office in examining and granting a patent or may be shortened if a patent is terminally disclaimed over a commonly owned patent or a patent naming a common inventor and having an earlier expiration date.

Our core technology—biomass to CMF and HTC—is protected with patents, trade secrets, and know-how. We have 23 patents directed to CMF. One U.S. and one Korean composition of matter patent expiring in 2034 are directed to crystalline forms of CMF. Twelve patents are directed to compositions of and methods for preparing CMF. These include three in the United States, and one each in Brazil, and Mexico, which expire in 2032, as well as three patents in the United States, one in Malaysia, one in Europe, and one in Brazil that expire in 2034. Nine patents are directed to methods and systems for purifying CMF. These include one patent in the United States and one in China, each expiring in 2033, and three patents in the United States and one each in Brazil, China, Malaysia, and South Korea that expire in 2034. We have five pending applications directed to crystalline CMF, compositions, and methods for preparing CMF. These include one in the United States that would expire in 2034, two in China that would expire in 2034, one in Hong Kong that would expire in 2034, and one in Europe that would expire in 2034.

We also have eight patents directed to methods for preparing PX and terephthalic acid (PTA when purified). These include two patents in the United States and one each in China and Japan that expire in 2032, as well as three patents in the United States and one in Japan that expire in 2033.

We have five patents directed to dimethylfuran (“DMF”), a derivative of CMF, including three patents in the United States expiring in 2034 directed to methods of producing DMF and two patents in the United States expiring in 2035 directed to compositions of and methods for preparing DMF. We also have one pending patent application in Thailand expiring 2035 directed to DMF.

We have two pending patent applications directed to furandicarboxylate-polymer compositions, including PEF, and methods for producing such compositions. These include one pending application in China that would expire 2036 and one pending application in the United States that would expire in 2037.

In addition, we have four patents directed to polyhydroxylalkanoate (“PHA”), a biodegradable plastic. These include one composition of matter patent in the United States and one in Malaysia, each expiring in 2031, that are directed to bacterial strains for producing PHA, as well as two patents in the United States, and one in Malaysia expiring in 2033 directed to compositions and methods for converting PHA into PHA derivatives.

We have two patents and one pending application directed to other derivatives of CMF. These include two U.S. patents expiring in 2035 and 2036, respectively, directed to methods of preparing chemical derivatives from CMF, and one pending application in China directed to compositions for preparing CMF derivatives.

We have one pending patent application in the United States that would expire in 2036 and is directed to compositions and resins of activated carbon and methods for producing these.

Finally, we have forty pending international applications directed to closures for containers including one pending utility patent application with the Patent Cooperative Treaty, and three pending design applications each in Australia, Brazil, Canada, China, Europe, India, Japan, Mexico, Saudi Arabia, South Korea, Taiwan, Turkey, and the United Kingdom that would expire in 2038. We also have three pending design patent application in the United States,

Trade secrets. We maintain a secure digital vault of our trade secrets with heightened confidentiality protections. Access to this vault is limited to a select group and is granted on a need-to-know basis. Further, the information in the vault is left strategically incomplete and requires corroboration from referenced internal documents to ensure that the entirety of any trade secret is known only by someone who has access to each such document. Our employees are required to participate in invention assignment and non-disclosure protocols to further ensure the protection of our trade secrets.

Know-how. An important aspect of our intellectual property, in addition to our patent portfolio and trade-secrets, is the depth of understanding and proficiency we gained in the behavior of the Origin technology platform’s chemical reactions, the handling of feedstocks, and the process-ability of feedstocks given certain conditions. This know-how into our process and materials is carefully captured in many ways, such as by being photographed, videoed, measured, quantified, summarized, compared, and otherwise described. Within this information set, we have identified many key insights without which we believe a would-be competitor could not successfully operate in our industry or replicate our results.

Regulatory

Regulation by government authorities in the United States, Canada and other countries is a significant factor in the production and sale of our products and our ongoing research and development activities. The chemicals and intermediates that we manufacture and use, including CMF and HTC, require (or as the products are further commercialized are anticipated to require) authorization or exemptions under the Toxic Substances Control Act (TSCA) administered by the U.S. Environmental Protection Agency (the EPA), the Canadian Environmental Protection Act (CEPA) administered by Health Canada and Environment and Climate Change Canada, and the European Union’s regulation entitled the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). Our production processes are subject to regulations and permit requirements relating to air emissions, wastewater discharges, waste generation and disposal and other environmental matters. Additionally, some applications will involve food contact and will be regulated by the U.S. Food and Drug Administration (the FDA).

Chemical control regulations applicable to us, such as TSCA, CEPA or REACH, impose restrictions with respect to the permitted volumes of, or the sites at which, certain chemicals manufactured or used by us may be manufactured, imported, transported and/or released into the environment. For example, manufacture or import into Canada of HTC is limited to a certain amount per year prior to submitting a New Substance Notification. Compliance with these regulations is complex and could require significant capital and/or operating expenses, and failure to comply with any of these regulations can have significant consequences. Our regulatory focus has been on seeking the removal or relaxation of certain restrictions to enable scaled up production. We have filed or will be filing notifications under TSCA and CEPA seeking to remove these restrictions, as necessary, and are working to identify alternatives that are not similarly restricted in the location where they are used.

Several states like California, Maine, and New Jersey, as well as Canada and the European Union, have enacted or are considering “minimum recycled content” regulations mandating certain minimum post-consumer recycled content in certain types of packaging, including, specifically, plastic beverage containers. Legislative and regulatory measures to mandate or encourage waste reduction and recycling also have been considered, or are under consideration, in jurisdictions where we expect to produce or sell our products. These regulations may present new opportunities for sustainable products like our all-PET caps and closures, which can be made from recycled PET and be recycled together with the PET containers on which they are used.

Employees and Human Capital Resources

Intentional Culture and Leadership. At Origin, our values inform our decision making and how we act. We are deliberate, open, and transparent about our dedication to our core purpose; to enable the world’s transition to sustainable materials as the leading carbon negative materials company. We have assembled an exceptional team of scientists, engineers, and business leaders to develop and execute our strategic plans.

Diversity, Equity & Inclusion. We believe that having a diverse workforce, equitable employment practices, and an inclusive workplace better positions us to respond to the unique needs of all our stakeholders. In 2020, we created the Origin Committee on Diversity and Inclusion. This committee is responsible for ensuring that Origin policies, procedures, and practices are conducive to creating and maintaining a diverse and inclusive environment that is valuable for all stakeholders. In late 2021, we hired a leading diversity, equity & inclusion (“DE&I”) consulting firm, to help us map out our DE&I strategy and operationalize our DE&I goals. In 2022, Origin Materials began executing on a multiyear strategy that includes prioritizing the hiring of a diverse workforce, an annual “Inclusion Survey” to benchmark & track DE&I progress, DE&I in person and online training for all levels of the organization, and building internal expertise around DE&I issues.

Human Capital. We believe that our ability to attract, retain and motivate exceptional employees is vital to our long-term competitive advantage. As such, our compensation practices, including long-term equity incentive plans, are designed to drive sustainable performance and align employee incentives with shareholder values. As of December 31, 2023, we had approximately 112 employees located in the United States and 50 employees in Canada, all of whom were full-time employees. The number of employees decreased by approximately 30% as a result of the reduction in workforce affected in November 2023. None of our employees is subject to a collective bargaining agreement and we believe we have a good relationship with our employees.

Corporate Information

Artius Acquisition Inc. (“Artius”) incorporated in the Cayman Islands on January 24, 2020. Legacy Origin was incorporated in 2008 as a Delaware corporation. Our principal executive offices are located at 930 Riverside Parkway, Suite 10, West Sacramento, California 95605. We have the following wholly-owned subsidiaries:

- Origin US Megasite Holding, LLC;
- Origin US Megasite 1, LLC;
- Origin US Megasite Development, LLC;
- Origin US Megasite Operating, LLC;
- Origin Materials Canada Holding Limited;
- Origin Materials Canada Pioneer Limited;
- Origin Materials Canada Polyesters Limited; and
- Origin Materials Canada Research Limited.

Additional Information

Origin’s annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports are available free of charge on the Company’s website at <https://investors.originmaterials.com> as soon as reasonably practicable after such material is electronically filed with, or furnished to, the Securities and Exchange Commission.

Item 1A. Risk Factors

The following risk factors apply to our business and operations. These risk factors are not exhaustive, and investors are encouraged to perform their own investigation with respect to our business, financial condition and prospects. We may face additional risks and uncertainties that are not presently known to us, or that we currently deem immaterial, which may also impair our business. The following discussion should be read in conjunction with the consolidated financial statements and notes to such consolidated financial statements included elsewhere in this Annual Report and the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section of this Annual Report.

Risks Related to Our Business

We are an early stage company with a history of losses and our future profitability is uncertain.

We have had a history of net losses due to our primary focus on research and development, plant construction, capital expenditures and early-stage commercial activities. Substantially all of our net losses since inception have resulted from our plant construction, research and development, and general and administrative costs associated with our operations. We have only recently begun generating revenue, and we expect that our net losses from operations will continue for the foreseeable future. Based on our estimates and projections, which are subject to significant risks and uncertainties, we expect our commercial scale production to be limited for several years and challenges with the design, construction, funding, and labor and equipment supply for our plants may further delay this timeline. Even as we commercialize and begin to generate revenue, we may not become profitable for many years, if at all.

Our potential profitability is dependent upon many factors, including our ability to effectively operate our current plants, complete development of future plants, maintain an adequate supply chain, anticipate and react to demand for our products,

manufacture our products on a commercial scale, secure additional customer commitments, and otherwise execute our growth plan. The rate at which we incur losses may be higher in future periods as we:

- develop our all-PET cap and closure business;
- increase our spending on strategic partnerships;
- begin production at our OM1 plant;
- increase our sales and marketing activities; and
- decide to expand our commercial production capabilities and incur costs associated with developing our plants.

Because we will incur the costs and expenses from these efforts before receiving meaningful revenue, our losses in future periods could be significant. We may find that these efforts are more expensive than we currently estimate or that these efforts may not result in revenues, which would further increase our losses.

We may not manage growth effectively.

Our failure to manage growth effectively could harm our business, results of operations and financial condition. We anticipate that a period of expansion may be required to address potential growth. This expansion will place a significant strain on our management, operational and financial resources. To manage the growth of our operations and personnel, we must establish appropriate and scalable operational and financial systems, procedures and controls and establish and maintain a qualified finance, administrative and operations staff. We may be unable to hire, train, retain and manage the necessary personnel or to identify, manage and exploit potential strategic relationships and market opportunities.

Our business plan assumes we can secure substantial additional project financing and government incentives, which may be unavailable on favorable terms, if at all.

We expect to need substantial additional project financing and government incentives in order to execute our growth strategy and expand our manufacturing capability to advance our biomass conversion technology. We have not yet secured such project financing and government incentives, and they may not be available on commercially reasonable terms, if at all. In particular, our ability to obtain financing for the construction of future plants may depend in part on our ability to first enter into customer agreements sufficient to demonstrate sufficient demand to justify the construction of such plants. If we are unable to obtain such financing and government incentives, or secure sufficient customer agreements, on commercially reasonable terms, or at all, we will not be able to execute our growth strategy.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of those securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making acquisitions or capital expenditures or declaring dividends. Debt financing could also have significant negative consequences for our business, results of operations and financial condition, including, among others, increasing our vulnerability to adverse economic and industry conditions, limiting our ability to obtain additional financing, requiring the dedication of a substantial portion of our cash flow from operations to service our indebtedness, thereby reducing the amount of our cash flow available for other purposes, limiting our flexibility in planning for, or reacting to, changes in our business, and placing us at a possible competitive disadvantage compared to less leveraged competitors or competitors that may have better access to capital resources.

If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or products, grant licenses on terms that may not be favorable to us, or make other concessions. If we are unable to raise additional funds through equity or debt financings or other arrangements when needed, we may be required to delay, limit, reduce or terminate our commercialization, research and development efforts or grant rights to third parties to market and/or develop products that we would otherwise prefer to market and develop ourselves.

If we seek government grants, incentives or subsidies, their terms may be limiting or restrict certain of our planned operations, thereby requiring us to alter our operating plans and materially impacting our financial projections and projected results of operations. Government grants may also be terminated, modified or recovered under certain conditions without our consent.

Our outstanding secured and unsecured indebtedness, ability to incur additional debt and the provisions in the agreements governing our current debt, and certain other agreements, could harm our business, financial condition, results of operations and prospects.

Our debt service and similar obligations could have important consequences to us for the foreseeable future, including that our ability to obtain additional financing for capital expenditures, working capital or other general corporate purposes may be impaired and we may be or become substantially more leveraged than some of our competitors, which could place us at a relative competitive disadvantage and make us more vulnerable to changes in market conditions and governmental regulations.

We are required to maintain compliance with covenants under our debt and similar agreements. There are and will be operating or financial restrictions and covenants in certain of our debt and similar agreements, including the promissory notes and prepayment agreements we are party to, as well as certain other agreements to which we are or may become a party. These limit, among other things, our ability to incur certain additional debt, create certain liens or other encumbrances and sell assets. These covenants could limit our ability to engage in activities that may be in our best long-term interests. Our failure to comply with certain covenants in these agreements could result in an event of default under the various debt and similar agreements, allowing lenders to accelerate the maturity for the debt under these agreements and to foreclose upon any collateral securing the debt. Under such circumstances, we might not have sufficient funds or other resources to satisfy all of our obligations.

We are exposed to credit risk in our activities related to potential nonperformance by customers.

In the normal course of our business, we provide payment terms to certain of our customers. As a result, our business could be adversely affected if our customers' financial condition deteriorates and they are unable to repay us. This risk may increase if there is a general economic downturn affecting a large number of our customers or if our customers fail to manage their business effectively or adequately disclose their financial condition to us. The Company manages the risk of customer default through a combination of due diligence, contractual terms, and a diversified customer base. The number of customers, as well as our ability to discontinue service, contributes to reduce credit risk with respect to accounts receivable. Despite such mitigation efforts, customer defaults may occur.

Risks Related to Our Operations and Industry

Construction of additional plants beyond Origin 1 may not be timely completed or completed in a cost-effective manner or at all. Any delays in or failure to finance and complete the construction of additional plants could severely impact the implementation of our biomass conversion technology platform.

Our ability to implement our biomass conversion technology platform and to satisfy our customer demand and contractual obligations depend on our ability to secure financing for and complete construction of several commercial scale plants. In particular, except for Origin 2, subject to finalization of economic incentives, we have not selected a site for any of our future planned plants, and may have difficulty finding a site with appropriate infrastructure and access to raw materials. With respect to these future plants, we also do not have agreements with engineering, procurement or construction firms. Consequently, we cannot predict on what terms such firms may agree to design and construct our future plants. If we are unable to construct these plants within the planned timeframes, timeframes that are relevant to our customers' carbon reduction goals, or in a cost-effective manner, or at all due to a variety of factors, including, but not limited to, a failure to acquire or lease land on which to build our plants, a stoppage of construction as a result of epidemics, disruptions caused by the recent global sanctions imposed against Russia following its military intervention in Ukraine, a major supplier of certain metals such as nickel used in materials of construction, unexpected construction problems, permitting and other regulatory issues, severe weather, inflationary pressures, labor disputes, or issues with subcontractors or vendors, including payment disputes, which we have previously experienced, our business, financial condition, results of operations and prospects could be severely impacted, we may lose customers and customer demand, and we could face litigation.

The construction and commissioning of any new project is dependent on a number of contingencies some of which are beyond our control. There is a risk that significant unanticipated costs or delays could arise due to, among other things, errors or omissions, unanticipated or concealed project site conditions, including subsurface conditions and changes to such conditions, unforeseen technical issues or increases in plant and equipment costs, insufficiency of water supply and other utility infrastructure, inadequate contractual arrangements, or design changes and associated or additional technical development work related, for example, to new or different process steps or product streams, or changes in the scale of equipment or operations. Should these or other significant unanticipated costs or delays arise, this could have a material adverse impact on our business, financial performance and operations. No assurance can be given that construction will be completed on time or at all, or as to whether we will have sufficient funds available to complete construction.

We plan to rely on a limited number of plants to meet customer demand for our future intermediate chemical sales.

Our operating plan assumes that we will rely on a limited number of plants to meet customer demand and that these plants will supply most of our products until additional plants come online. Adverse changes or developments affecting these facilities could impair our ability to produce our products. Any shutdown or period of reduced production at these facilities, which may be caused by regulatory noncompliance or other issues, as well as other factors beyond our control, such as severe weather conditions, natural disaster, fire, power interruption, work stoppage, disease outbreaks or pandemics (such as COVID-19), equipment failure or delay in supply delivery, would, among other things, significantly disrupt our ability to recognize revenue, execute our expansion plans, and meet our contractual obligations and customer demand. In addition, our plant equipment may be costly to replace or repair, and our equipment supply chains may be disrupted in connection with pandemics, trade wars and sanctions (such as those imposed against Russia following its military intervention in Ukraine), or other factors. If any material amount of our equipment is damaged, we could be unable to predict when, if at all, we could replace or repair such equipment or find suitable alternative equipment, which could adversely affect our business, financial condition, results of operations and prospects. Performance guarantees may not be sufficient to cover damages or losses, or the guarantors under such guarantees may not have the ability to pay. We may be unable to obtain appropriate types or amounts of insurance, and any insurance coverage we have may be insufficient to cover all of our potential losses or continue to be available to us on acceptable terms, or at all.

We may be delayed in procuring or be unable to procure necessary capital equipment.

While much of the equipment we use to produce our products is currently widely available, we rely on outside companies to continue to manufacture the equipment necessary to produce our products. In addition, some equipment we use to produce our products requires significant lead time to manufacture. If our suppliers of manufacturing equipment are unable or unwilling to provide us, or if we experience significant delays in obtaining the necessary manufacturing equipment, or parts necessary to repair and maintain that equipment, our business, we may be unable to make our products and our results of operations and financial condition could be adversely affected. The repair, maintenance, or construction of our manufacturing equipment may also require a substantial portion of certain materials and supplies relative to the overall global supply of such materials and supplies. If we are unable to secure an adequate supply of such materials and supplies on commercially reasonable terms, or at all, such repair, maintenance, or construction may be delayed or terminated.

We have not yet produced our products in large commercial quantities.

We have no experience in producing large quantities of our products. While we have succeeded in producing small amounts of our products in our pilot plants and Origin 1 plant for customer evaluation, we have only recently commenced commercial-scale production. There are significant technological and logistical challenges associated with producing, marketing, selling and distributing products in the specialty chemicals industry, including our products, and we may not be able to resolve all of the difficulties that may arise in a timely or cost-effective manner, or at all. While we believe that we understand the engineering and process characteristics necessary to successfully build and operate our additional planned facilities and to scale up to larger facilities, we may not be able to cost-effectively manage such construction and operation at a scale or quality consistent with customer demand in a timely or economical manner.

Any decline in the value of carbon credits associated with our products could harm our results of operations, cash flow and financial condition.

The value of our products may be dependent on the value of carbon credits, programs relating to low-carbon materials and products standards and other similar regulatory regimes or the implicit value of decarbonized materials. The value of these credits fluctuates based on market and regulatory forces outside of our control. There is a risk that the supply of low-carbon alternative materials and products outstrips demand, resulting in the value of carbon credits declining. Any such declines could mean that the economic benefits from our customers' efforts to decarbonize their operations might not be realized. Any decline in the value of carbon credits associated with our products could harm our results of operations, cash flow and financial condition.

We rely on a limited number of customers for a significant portion of our near-term revenue.

We currently have commercial agreements with a limited number of customers from which we expect to derive a significant portion of near-term revenue. The loss of one or more of our significant customers, a substantial reduction in their orders, their failure to exercise customer options to enter into new offtake agreements or purchase commitments or to purchase product, their unwillingness to extend contractual deadlines if we fail to meet production, product, or specification requirements, their inability to perform under their contracts or a significant deterioration in their financial condition could harm our business, results of operations and financial condition. If we fail to perform under the terms of these agreements, the customers could seek to terminate these agreements and/or pursue damages against us, which could harm our business.

Our products may not achieve market success.

We currently have a relatively small number of binding customer commitments for commercial quantities of our products. Some prospective customers are currently evaluating and testing our products prior to making large-scale purchase decisions. Other products we expect to develop have not yet started customer evaluation and testing. The successful commercialization of our products is dependent on our customers' ability to commercialize the end-products that utilize our products, which may gain market acceptance slowly, if at all. Furthermore, the technology for our products is new, and the economic performance and ultimate carbon footprint of these products is uncertain. The market for carbon-negative products is nascent and subject to significant risks and uncertainties.

Market acceptance of our products will depend on numerous factors, many of which are outside of our control, including, among others:

- public acceptance of such products;
- our ability to produce products of consistent quality that offer functionality comparable or superior to existing or new products;
- our ability to produce products fit for their intended purpose;
- our ability to produce new products or customizations of existing products to match changes in public demand;
- our ability to timely obtain necessary regulatory approvals for our products;
- the speed at which potential customers qualify our products for use in their products;
- the pricing of our products compared to competitive and alternative products, including petroleum-based plastics;
- the strategic reaction of companies that market competitive products;
- our reliance on third parties who support or control distribution channels; and
- general market conditions, including fluctuating demand for our products.

Our industry is highly competitive, and we may lose market share to producers of products that can be substituted for our products, which may have an adverse effect on our results of operations and financial condition.

The specialty chemicals industry is highly competitive, and we face significant competition from both large established producers of fossil-based materials, recycled fossil-based materials and a variety of current and future producers of low-carbon, biodegradable, or renewable resource-based materials. Many of our current competitors have longer operating histories, greater name recognition, larger customer bases and significantly greater financial, sales and marketing, manufacturing, distribution, technical and other resources than us. Our competitors may be able to adapt more quickly to new or emerging technologies, changes in customer requirements and changes in laws and regulations. In addition, current and potential competitors have established or may establish financial or strategic relationships among themselves or with existing or potential customers or other third parties. Accordingly, new competitors or alliances among competitors could emerge and rapidly acquire significant market share.

Our competitors may also improve their relative competitive position by successfully introducing new products or products that can be substituted for our products, improving their manufacturing processes, or expanding their capacity or manufacturing capabilities. Further, if our competitors are able to compete at advantageous cost positions, this could make it increasingly difficult for us to compete in markets for less-differentiated applications. If we are unable to keep pace with our competitors' product and manufacturing process innovations or cost position, it could harm our results of operations, financial condition and cash flows.

Our commercial success may be influenced by the price of petroleum relative to the price of non-fossil feedstocks.

Our commercial success may be influenced by the cost of our products relative to petroleum-based products. The cost of petroleum-based products is in part based on the price of petroleum, which is subject to historically fluctuating prices. Our production plans assume use of biomass feedstocks such as timber and forest residues, which historically have experienced low volatility relative to petroleum. If the price of bio-based feedstocks increases, the price of petroleum decreases, or we use bio-based feedstocks such as sugars or starches that may have higher volatility or cost than timber and forest residues, our products may be less competitive relative to petroleum-based products. A material decrease in the cost of conventional petroleum-based products may require a reduction in the prices of our products for them to remain attractive in the marketplace and may negatively impact our revenues.

Increases or fluctuations in the costs of our raw materials may affect our cost structure.

The price of raw materials may be impacted by external factors, including uncertainties associated with war, terrorist attacks, weather and natural disasters, health epidemics or pandemics (such as COVID-19), civil unrest, the effects of climate change or political instability, plant or production disruptions, strikes or other labor unrest, inflationary pressures, breakdown or degradation of transportation infrastructure used in the delivery of raw materials or changes in laws or regulations in any of the countries in which we have significant suppliers.

Our technology is designed to use biomass such as local timber and forest residues as raw materials. The cost of these raw materials is generally influenced by supply and demand factors, and our operating plans include assumptions that the timber and forest residues we intend to use as feedstock will be available at prices similar to historic levels with low volatility. As we continue to expand our production, we will increase our demand for timber and forest residues which may alter the anticipated stability in the costs of our raw materials and potentially drive an increase in the cost of such raw materials.

Our results of operations will be directly affected by the cost of raw materials and other inputs, like the amount and cost of steam in the manufacturing process. The cost of raw materials and energy to produce steam required during feedstock processing comprises a significant amount of our total cost of goods sold and, as a result, movements in the cost of raw materials, and in the cost of other inputs, will impact our profitability. Because a significant portion of our cost of goods sold is represented by these raw materials, our gross profit margins could be adversely affected by changes in the cost of these raw materials if we are unable to pass the increases on to our customers.

If our raw material prices experience volatility, there can be no assurance that we can continue to recover raw material costs or retain customers in the future. As a result of our pricing actions, customers may become more likely to consider competitors' products, some of which may be available at a lower cost. Significant loss of customers could adversely impact our results of operations, financial condition and cash flows.

We are dependent on third-party suppliers and service providers, some of which are sole source suppliers, who may fail to deliver raw materials or equipment or fail to supply needed services at all or according to schedules, prices, quality and volumes that are acceptable to us, or we may be unable to manage these supplies effectively.

Parts of our supply chain currently are dependent on a limited number, and in some cases a single, third-party supplier or service provider for key inputs, equipment, and services including for conversion of our chemical intermediates produced by our Origin 1 plant into downstream derivatives and applications. We have not yet secured agreements with our preferred (or the only) supplier of some of these inputs, equipment, and services, and we may be unable to do so on a time frame or terms we find acceptable, or at all. Our reliance on few or single suppliers in a limited number of locations risks multiple supply chain vulnerabilities. The military conflict in Ukraine can exacerbate the risks to our supply chain to the extent our suppliers depend on raw materials, components, or parts from Russia or Ukraine including, for example, certain metals used in materials of construction.

Finding substitute suppliers and service providers, to the extent they exist, may be expensive, time-consuming, or impossible and could interrupt or delay the supply of our products causing us to lose revenue and potentially harm our customer relationships or reputation and expose us to contractual remedies under our supply agreements. To the extent we do not have firm commitments from our third-party suppliers or service providers for a specific time period or capacity, quantity, and/or pricing, our suppliers may allocate capacity to their other customers, which could make that capacity unavailable to us when needed or at reasonable prices and prevent us from delivering our products on time or at all. For instance, if we are unable to timely obtain conversion services for some of our intermediates, those intermediates may need to be stored for extended periods and could degrade or become unusable, forcing us to dispose of the intermediates and/or replace them at additional cost. Any of these occurrences could adversely affect our supply chain and cause serious harm to our business.

Our manufacturing processes are designed to use biomass such as local timber and forest residues as our preferred raw materials. However, we may be unable to secure agreements with local suppliers for the necessary amount of raw materials in certain circumstances. Additionally, if our suppliers do not accurately forecast and effectively allocate sufficient materials to us or if they are not willing to allocate sufficient supplies to us, it may reduce our access to raw materials needed for our manufacturing and require us to search for new suppliers. The unavailability of any raw materials could result in production delays, idle manufacturing facilities, product design changes and loss of access to important residues supporting our production, as well as impact our capacity to fulfill our obligations under our offtake agreements. In addition, unexpected changes in business conditions, materials pricing, labor issues, wars, trade policies, natural disasters, epidemics or pandemics, trade and shipping disruptions, and other factors beyond our or our suppliers' control could also affect these suppliers' ability to deliver components to us or to remain solvent and operational.

Additionally, we may be unsuccessful in our continuous efforts to negotiate with existing suppliers to obtain cost reductions and avoid unfavorable changes to terms, or source less expensive suppliers for certain materials, especially in light of the overall increases in supply and shipment pricing. Any of these occurrences may harm our business, prospects, financial condition and operating results.

If we are required to obtain alternate sources for raw materials, for example because a supplier is unwilling or unable to execute or perform under raw material supply agreements, if a supplier terminates its agreements with us, if a supplier is unable to meet increased demand as our commercial scale production expands, if we are unable to renew its contracts or if we are unable to obtain new long-term supply agreements to meet changing demand, we may not be able to obtain these raw materials in sufficient quantities, on economic terms, or in a timely manner, and we may not be able to enter into long-term supply agreements on terms as favorable to us, if at all. A lack of availability of raw materials could limit our production capabilities, require us to use alternate raw materials such as non-timber feedstocks that may be more expensive or have inferior carbon reduction or other performance characteristics, and prevent us from fulfilling customer orders, and therefore harm our results of operations and financial condition.

As the scale of our manufacturing increases, we will also need to accurately forecast, purchase, warehouse and transport raw materials at high volumes to our manufacturing facilities internationally. If we are unable to accurately match the timing and quantities of raw material purchases to our actual needs or successfully implement inventory management and warehousing systems, we may incur unexpected production disruption, storage, transportation and write-off costs, which may harm our business and operating results.

Maintenance, expansion and refurbishment of our facilities, the construction of new facilities and production lines, and the development and implementation of new manufacturing processes involve significant risks.

Our facilities may require regular or periodic maintenance, upgrading, expansion, refurbishment or improvement. Any unexpected operational or mechanical failure, including failure associated with breakdowns and forced outages, could

reduce our facilities' production capacity below expected levels, which would reduce our production capabilities and ultimately our revenues. Unanticipated capital expenditures associated with maintaining, upgrading, expanding, repairing, refurbishing, or improving our facilities may also reduce our profitability. Our facilities may also be subject to unanticipated damage as a result of natural disasters, terrorist attacks or other events.

If we make any major modifications to our facilities, such modifications likely would result in substantial additional capital expenditures and could prolong the time necessary to bring the facility online. We may also choose to refurbish or upgrade our facilities based on our assessment that such activity will provide adequate financial returns. However, such activities require time for development and capital expenditures before commencement of commercial operations, and key assumptions underpinning a decision to make such an investment may prove incorrect, including assumptions regarding construction costs and timing, which could harm our business, financial condition, results of operations and cash flows.

The development of new manufacturing facilities entails a number of risks and assumptions, including the ability to begin production within the cost and timeframe estimated and to attract a sufficient number of skilled workers to meet the needs of the new facility. For example, the anticipated costs of constructing Phase 1 of Origin 2 are far higher than initially estimated and timelines may be delayed due to higher material costs, supply chain issues, inflation and labor shortages. Additionally, our assessment of the projected benefits associated with the construction of new manufacturing facilities is subject to a number of estimates and assumptions, which in turn are subject to significant economic, competitive and other uncertainties that are beyond our control. If we experience delays or increased costs, our estimates and assumptions are incorrect, or other unforeseen events occur, our business, ability to supply customers, financial condition, results of operations and cash flows could be adversely impacted.

Finally, we may not be successful or efficient in developing or implementing new production processes. Innovation in production processes involves significant expense and carries inherent risks. Such risks may include difficulties in designing, developing, implementing, and scaling up new process technologies, development and production timing delays, lower than anticipated manufacturing yields, product defects, and inability to consistently meet customers' product specifications, performance and carbon intensity, or cost requirements, among others. Errors, defects in materials, operating permit and license delays, customer product returns, interruption in our supply of materials or resources, and disruptions at our facilities due to accidents, maintenance issues, or unsafe working conditions, all could affect the timing, efficiency, or success of our production processes. Such production issues can lead to increased costs and may affect our ability to meet product demand, which could adversely impact our business and results from operations.

We may not be successful in finding future strategic partners for continuing development of our manufacturing facilities and feedstock opportunities, or tolling and downstream conversion of our products.

We may seek to develop additional strategic partnerships to develop our manufacturing facilities, increase feedstock supply due to manufacturing constraints or capital costs required to develop our products and plants. We may not be successful in our efforts to establish such strategic partnerships or other alternative arrangements for our products, technology, or plants because our research and development pipeline may be insufficient, our products or plant designs or manufacturing processes may be deemed to be at too early of a stage of development for collaborative effort, or third parties may not view our products or plants as having the requisite potential to demonstrate commercial success. In particular, if we are unable to develop strategic partnerships to fund our construction of Origin 2, we may be delayed in the completion of Origin 2 or may never be able to complete construction of Origin 2, which may adversely impact our operation and financial results.

If we are unable to reach agreements with suitable collaborators on a timely basis, on acceptable terms, or at all, we may have to curtail the development of our products, delay commercialization or development of manufacturing facilities, reduce the scope of any sales or marketing activities or increase expenditures and undertake development or commercialization activities at our own expense. If we elect to fund development or commercialization activities on our own, we may need to obtain additional expertise and additional capital, which may not be available to us on acceptable terms or at all. If we fail to enter into collaborations and do not have sufficient funds or expertise to undertake the necessary development and commercialization activities, we may not be able to develop additional products or plants, and our business, financial condition, results of operations and prospects may be materially and adversely affected.

We may rely heavily on future collaborative and supply chain partners.

We have entered into, and may enter into, strategic partnerships to develop and commercialize our current and future research and development programs with other companies to accomplish one or more of the following:

- obtain capital, equipment, and facilities;

- obtain funding for research and development programs, product development programs, and commercialization activities;
- obtain expertise in relevant markets;
- obtain access to raw materials;
- obtain sales and marketing services or support;
- obtain conversion services and other supply chain support; and/or
- obtain access to intellectual property and ensure freedom to operate.

We may not be successful in establishing or maintaining suitable partnerships, and we may not be able to negotiate collaboration agreements having terms satisfactory to us, or at all. Failure to make or maintain these arrangements or a delay or failure in a collaborative partner's performance under any such arrangements could harm our business and financial condition.

In addition, global supply chain disruptions have caused, and may continue to cause, delays in the shipment of goods, particularly those made in Asian countries. We have incurred, and may continue to incur, additional costs to expedite deliveries of such goods or to obtain substitute goods that are available to us sooner. Continued supply chain disruptions and our efforts to mitigate them may adversely impact our financial condition, results of operations, and cash flows.

We have entered into and may in the future enter into collaborations, strategic alliances, or licensing arrangements, which expose us and our intellectual property to competitive risks and limitations associated with third-party collaborations and that may not produce the benefits we anticipate.

We have entered, and may in the future enter, into license and collaboration arrangements for the development and production of some of our materials and products. In the future, we may enter into additional license and collaboration arrangements. Any collaboration we enter into is subject to numerous risks. Such risks may include, among others, collaborators' significant discretion to determine the effort and resources they will apply to the collaboration, to delay or elect not to continue development of a product or process under the collaboration, or to develop, independently or with third parties, products or processes that compete directly or indirectly with our products or manufacturing processes. A collaborator's development, sales, or marketing activities or other operations may not comply with applicable laws resulting in civil or criminal proceedings.

In addition, we could grant exclusive rights to our collaborators that would prevent us from collaborating with others. Collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability. Our collaborators may own or co-own intellectual property covering products that result from our collaboration with them, depriving us of the exclusive right to develop or commercialize such intellectual property. Disputes may arise with respect to the ownership of any intellectual property developed pursuant to our collaborations.

Disputes between us and a collaborator may delay or terminate the development or commercialization of our products or result in costly litigation or arbitration that diverts management attention and resources. Termination of a collaboration may also result in a need for additional capital to pursue further development of the applicable current or future products.

We may seek to enter into additional collaborations, joint ventures, licenses and other similar arrangements for the development of our products, due to capital costs required to develop the product or potential manufacturing constraints. We may not be successful in our efforts to establish such collaborations for our products because our products may be deemed to be at too early of a stage of development for collaborative effort or third parties may not view our products as having the requisite potential to demonstrate a significant commercial opportunity. In addition, we face significant competition in seeking appropriate strategic partners, and the negotiation process can be time consuming and complex. Further, any future collaboration agreements may restrict us from entering into additional agreements with potential collaborators. We cannot be certain that, following a strategic transaction or license, we will achieve an economic benefit that justifies such transaction. Even if we are successful in our efforts to establish such collaborations, the terms that we agree upon may not be favorable to us, and we may not be able to maintain such collaborations.

In addition, any potential future collaborations may be terminable by our strategic partners, and we may not be able to adequately protect our rights under these agreements. Furthermore, strategic partners may negotiate for certain rights to control decisions regarding the development of our products, and may not conduct those activities in the same manner as we do. Any termination of collaborations we enter into in the future, or any delay in the development of products under such collaborations, could delay the manufacturing and sales of our products, which could have a material adverse effect on our business, financial condition and results of operations.

We may become subject to product liability claims that may not be covered by insurance and could require us to pay substantial sums.

We are subject to an inherent risk of, and adverse publicity associated with, product liability and other liability claims, whether or not such claims are valid. In addition, our customers are subject to product liability claims, and could seek contribution from us. A successful product liability claim or series of claims against us could adversely impact the specialty chemicals industry, our reputation or our financial condition or results of operations. Product liability insurance may not be available to us on commercially acceptable terms, or at all. Even if such insurance is available, product liability or other claims may exceed our insurance coverage limits. A successful product liability claim that exceeds our insurance coverage limits, for which we are not otherwise indemnified, could require us to pay substantial sums and could harm our business, financial condition or results of operations.

Climate change may impact the availability of our facilities and, in addition, we may incur substantial costs to comply with climate change legislation and related regulatory initiatives.

Changing weather patterns and the increase in frequency of severe storms such as hurricanes and tornadoes could cause disruptions or the complete loss of our facilities or delay the construction of future facilities. In addition, climate change concerns, and changes in the regulation of such concerns, including greenhouse gas emissions, could also subject us to additional costs and restrictions, including increased energy and raw materials costs which could negatively impact our financial condition and results of operations. Climate change may also negatively impact our labor force by, for example, reducing the hours during which construction or other outdoor work can be performed safely in extreme heat or under conditions of poor air quality. In addition, climate change may negatively impact the availability of our feedstock, for example, by increasing the prevalence of certain pests harmful to the growth or quality of the biomass we use in our processes. The effects of climate change can not only adversely impact our operations, but also that of our suppliers and customers, and can lead to increased regulations and changes in consumer preferences, which could adversely affect our business, results of operations and financial condition.

Unfavorable global economic conditions could adversely affect our business, financial condition and results of operations.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets, including inflation and supply disruption. A domestic or global financial crisis can cause extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn, which could result from an event like the COVID-19 pandemic or the global sanctions imposed against Russia following its military intervention in Ukraine, or inflation in fuel costs resulting from regional instability due to the military conflict in Israel and Gaza, could result in a variety of risks to our business, including our inability to purchase necessary supplies on acceptable terms, if at all, and our inability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could strain our suppliers, possibly resulting in supply disruption, or cause delays in payments for our services by third-party payers or our collaborators. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

Our operating results may fluctuate significantly as a result of a variety of factors, many of which are outside of our control.

We are subject to, among other things, the following factors that may negatively affect our operating results:

- the announcement or introduction of new products by our competitors;
- our ability to upgrade and develop our systems and infrastructure to accommodate growth;
- our ability to attract and retain key personnel in a timely and cost-effective manner;
- our ability to attract new customers and retain existing customers;

- technical difficulties;
- the amount and timing of operating costs and capital expenditures relating to the expansion of our business, operations and infrastructure;
- our ability to identify and enter into relationships with appropriate and qualified third-party providers of necessary testing and manufacturing services;
- regulation by federal, state or local governments; and
- general economic conditions, as well as economic conditions specific to the chemicals, plastics, carbon products, and fuels industries, and other industries related to compostable or biodegradable substitutes for non-biodegradable plastics, as well as changes to commodity prices to which prices in some of our contracts are indexed.

As a result of our limited operating history and the nature of the markets in which we compete, it is difficult for us to forecast our revenues or earnings accurately. We have based our anticipated future expense levels largely on our investment plans and estimates of future events, although certain of our expense levels will, to a large extent, become fixed. As a strategic response to changes in the competitive environment, we may from time to time make certain decisions concerning expenditures, pricing, service or marketing that could harm our business, results of operations and financial condition. Due to the foregoing factors, our revenues and operating results are difficult to forecast.

Changes in tax laws or tax rulings could materially affect our financial position, results of operations, and cash flows.

The tax regimes we are subject to or operate under, including income and non-income taxes, are unsettled and may be subject to significant change. Changes in tax laws, regulations, or rulings, or changes in interpretations of existing laws and regulations, could materially affect our financial position and results of operations. For example, the 2017 Tax Cuts and Jobs Act (the “Tax Act”) made broad and complex changes to the U.S. tax code. Future guidance from the IRS with respect to the Tax Act may affect us, and certain aspects of the Tax Act could be repealed or modified in future legislation. The Coronavirus Aid, Relief, and Economic Security Act (the “CARES Act”) has already modified certain provisions of the Tax Act. More recently, the Inflation Reduction Act of 2022 (the “IRA”) includes provisions that will impact the U.S. federal income taxation of corporations, including imposing a minimum tax on the book income of certain large corporations and an excise tax on certain corporate stock repurchases that would be imposed on the corporation repurchasing such stock. In addition, it is uncertain if and to what extent various states will conform to the Tax Act, the CARES Act, the IRA, or any newly enacted federal tax legislation. The issuance of additional regulatory or accounting guidance related to the Tax Act could materially affect our tax obligations and effective tax rate in the period issued. In addition, many countries in Europe and a number of other countries and organizations, have recently proposed or recommended changes to existing tax laws or have enacted new laws that could significantly increase our tax obligations in the countries where we do business or require it to change the manner in which we operate our business.

The Organization for Economic Cooperation and Development has been working on a Base Erosion and Profit Shifting Project, and issued a report in 2015, an interim report in 2018, and is expected to continue to issue guidelines and proposals that may change various aspects of the existing framework under which our tax obligations are determined in many of the countries in which we do business. Similarly, the European Commission and several countries have issued proposals that would change various aspects of the current tax framework under which we are taxed. These proposals include changes to the existing framework to calculate income tax, as well as proposals to change or impose new types of non-income taxes, including taxes based on a percentage of revenue.

As we expand the scale of our international business activities, these types of changes to the taxation of our activities could increase our worldwide effective tax rate, increase the amount of taxes imposed on our business, and harm our financial position. Such changes may also apply retroactively to our historical operations and result in taxes greater than the amounts estimated and recorded in our financial statements.

Unanticipated changes in effective tax rates or adverse outcomes resulting from examination of our income or other tax returns could adversely affect our operating results and financial condition.

We are subject to taxation in Canada and the United States with increasingly complex tax laws, the application of which can be uncertain. The amount of taxes we pay in these jurisdictions could increase substantially as a result of changes in the applicable tax principles, including increased tax rates, new tax laws or revised interpretations of existing tax laws and precedents, which could have an adverse impact on our liquidity and results of operations. In addition, the authorities in several jurisdictions could review our tax returns and impose additional tax, interest and penalties, which could have an impact on us and on our results of operations. We have previously participated in government programs with the Canadian federal government and Canadian provincial governments that provide investment tax credits based upon qualifying research and development expenditures. If Canadian taxation authorities successfully challenge such expenses or the correctness of such income tax credits claimed, our historical operating results could be adversely affected. As a public company, we will no longer be eligible for refundable tax credits under the Canadian federal Scientific Research and Experimental Development Program (“SR&ED”) credits.

Our future effective tax rates could be subject to volatility or adversely affected by a number of factors.

Our future effective tax rates could be subject to volatility or adversely affected by a number of factors, including:

- changes in the valuation of our deferred tax assets and liabilities;
- expected timing and amount of the release of any tax valuation allowances;
- tax effects of stock-based compensation;
- costs related to intercompany restructurings;
- changes in tax laws, regulations or interpretations thereof; or
- future earnings being lower than anticipated in countries where we have lower statutory tax rates and higher than anticipated earnings in countries where we have higher statutory tax rates.

We may conduct activities in other jurisdictions through our subsidiaries pursuant to transfer pricing arrangements and may in the future conduct operations in other jurisdictions pursuant to similar arrangements. If two or more affiliated companies are located in different countries, the tax laws or regulations of each country generally will require that transfer prices be the same as those between unrelated companies dealing at arms’ length. While we intend to operate in compliance with applicable transfer pricing laws, our transfer pricing procedures are not binding on applicable tax authorities. If tax authorities in any of these countries were to successfully challenge our transfer prices as not reflecting arm’s length transactions, they could require us to adjust our transfer prices and thereby reallocate our income to reflect these revised transfer prices, which could result in a higher tax liability to us.

Our ability to use net operating loss carryforwards and other tax attributes may be limited in connection with the Business Combination or other ownership changes.

We have incurred losses during our history. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire, if at all.

Under the Tax Act, as modified by the CARES Act, U.S. federal NOL carryforwards generated in taxable periods beginning after December 31, 2017, may be carried forward indefinitely, but the deductibility of such net operating loss carryforwards in taxable years beginning after December 31, 2020, is limited to 80% of taxable income. In addition, our NOL carryforwards are subject to review and possible adjustment by the IRS, and state tax authorities. Under Sections 382 and 383 of the Code, our federal net operating loss carryforwards and other tax attributes may become subject to an annual limitation in the event of certain cumulative changes in the ownership of our stock. An “ownership change” pursuant to Section 382 of the Code generally occurs if one or more stockholders or groups of stockholders who own at least 5% of a company’s stock increase their ownership (as measured by value) by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Our ability to utilize our NOL carryforwards and other tax attributes to offset future taxable income or tax liabilities may be limited as a result of ownership changes, including potential changes in connection with the Business Combination or other transactions. Similar rules may apply under state tax laws. We have recorded a valuation allowance related to the majority of our NOL carryforwards and other deferred tax assets due to the uncertainty of the ultimate realization of the future benefits of those assets.

Risks Related to Government Regulation

Compliance with extensive environmental, health and safety laws could require material expenditures, changes in our operations or site remediation.

We use hazardous materials in our production process, and our operations also produce hazardous waste. The manufacture, transportation and sale of our products can present potentially significant health and safety concerns and are also under increased public and governmental scrutiny. Our products are also used in a variety of applications that have specific regulatory requirements such as those relating to products that have contact with food or are used for medical applications.

Accordingly, our operations are subject to environmental, health and safety laws and regulations at the international, national, state and local level in multiple jurisdictions. These laws and regulations govern, among other things, air emissions, wastewater discharges, solid and hazardous waste management and disposal, occupational health and safety, including dust and noise control, site remediation programs and chemical use and management. Many of these laws and regulations have become more stringent over time and the costs of compliance with these requirements may increase, including costs associated with any necessary capital investments. In addition, our plants will require operating permits that are subject to renewal and, in some circumstances, revocation. The necessary permits may not be issued or continue in effect, and renewals of any issued permits may contain significant new requirements or restrictions. The nature of the specialty chemicals industry exposes us to risks of liability due to the use, production, management, storage, transportation and sale of materials that are heavily regulated or hazardous and can cause contamination or personal injury or damage if released into the environment.

Compliance with environmental laws and regulations generally increases the costs of transportation and storage of raw materials and finished products, as well as the costs of storage and disposal of wastes. We may incur substantial costs, including fines, damages, criminal or civil sanctions and remediation costs, or experience interruptions in our operations for violations arising under environmental laws, regulations or permit requirements. In addition, the market for bioplastics is heavily influenced by applicable federal, state and local government laws, regulations and policies as well as public perception. Changes in these laws, regulations and policies or how these laws, regulations and policies are implemented and enforced could cause the demand for bioplastics to decline and deter investment in the research and development of bioplastics. Concerns associated with bioplastics, including land usage, national security interests, deforestation, food crop usage and other environmental concerns, continue to receive legislative, industry and public attention. This attention could result in future legislation, regulation and/or administrative action that could adversely affect our business.

Furthermore, various petrochemical products, including plastics, have faced increased public scrutiny due to negative coverage of plastic waste in the environment, which has resulted in local, state, federal and foreign governments proposing and in some cases approving, restrictions or bans on the manufacture, consumption and disposal of certain petrochemical products. Although our products are intended to replace petrochemical products, increased regulation on the use of such products or other products in the specialty chemicals industry, whatever their scope or form, could increase our costs of production, impact overall consumption of our products or result in misdirected negative publicity. Any inability to address these requirements and any regulatory or policy changes could harm our business, financial condition and results of operations.

We are subject to U.S. and foreign anti-corruption and anti-money laundering laws and regulations. We could face criminal liability and other serious consequences for violations, which would harm our business.

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act and possibly other anti-bribery and anti-money laundering laws in countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors and other collaborators from authorizing, promising, offering or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We can also be held liable for the corrupt or other illegal activities of our employees, agents, contractors and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm and other consequences.

Our operating plan may require us to source feedstock and supplies internationally, and foreign currency exchange rate fluctuations and changes to international trade agreements, tariffs, import and excise duties, taxes or other governmental rules and regulations could adversely affect our business, financial condition, results of operations and prospects.

Our expansion model is global and we expect to need to source feedstock and supplies from suppliers around the world. In particular, our manufacturing process is designed to use local timber and forest residues as our primary raw materials, which must be sourced locally. For the Origin 1 plant, this means we will need to source feedstock, as well as other supplies, from Canadian suppliers or arrange for transport of such feedstock and supplies into Canada. The U.S. federal government or other governmental bodies may propose changes to international trade agreements, tariffs, taxes and other government rules and regulations, and may impose sanctions limiting trade with other countries. If foreign currency exchange rates fluctuate or any restrictions or significant increases in costs or tariffs or sanctions are imposed related to feedstock and supplies sourced to our plants as a result of amendments to existing trade agreements or otherwise, this may increase our supply and shipping costs, resulting in potential decreased margins. We may expand our operations to countries with unstable governments that are subject to instability, corruption, changes in rules and regulations and other potential uncertainties that could harm our business, financial condition, results of operations and prospects. The extent to which our margins could decrease in response to any future tariffs is uncertain. We continue to evaluate the impact of trade agreements, as well as foreign currency exchange rate fluctuations and other recent changes in foreign trade policy on our supply chain, costs, sales and profitability. In addition, pandemics such as COVID-19 may result in increased travel restrictions and the extended shutdown of certain businesses throughout the world, and prolonged closures in Canada, Europe, Asia and elsewhere may disrupt the operations of certain suppliers of feedstock and other supplies, which could, in turn, negatively impact our business, financial condition, results of operations and prospects.

Risks Related to Our Intellectual Property

Our business relies on proprietary information and other intellectual property, and our failure to protect our intellectual property rights could harm our competitive advantages with respect to the use, manufacturing, sale or other commercialization of our processes, technologies and products, which may have an adverse effect on our results of operations and financial condition.

We intend to make significant capital investments into the research and development of proprietary information and other intellectual property as we develop, improve and scale our processes, technologies and products, and failure to fund and make these investments, or underperformance of the technology funded by these investments, could severely impact our business, financial condition, results of operations and prospects.

If we fail to adequately protect our intellectual property rights, such failure could result in the reduction or loss of our competitive advantage. We may be unable to prevent third parties from using our proprietary information and other intellectual property without our authorization or from independently developing proprietary information and other intellectual property that is similar to ours, particularly in those countries where the laws do not protect our proprietary rights to the same degree as in the U.S or those countries where we do not have intellectual property rights protection. The use of our proprietary information and other intellectual property by others could reduce or eliminate competitive advantages that we have developed, potentially causing us to lose sales or actual or potential customers, or otherwise harm our business. We are, and may continue to be, involved in litigation and administrative actions to protect these rights, and such proceedings could be burdensome and costly, could result in counterclaims challenging our intellectual property (including validity or enforceability) or accusing us of infringement, and we may not prevail.

Our patent applications and issued patents may be practiced by third parties without our knowledge. Our competitors may also attempt to design around our patents or copy or otherwise obtain and use our proprietary information and other intellectual property. Moreover, our competitors may already hold or have applied for patents in the U.S. or abroad that, if enforced, could possibly prevail over our patent rights or otherwise limit our ability to manufacture, sell or otherwise commercialize one or more of our products in the U.S. or abroad. With respect to our pending patent applications, we may not be successful in securing issued patents, or the claims of such patents may be narrowed, any of which may limit our ability to protect inventions that these applications were intended to cover, which could harm our ability to prevent others from exploiting our technologies and commercializing products similar to our products. In addition, the expiration of a patent can result in increased competition with consequent erosion of profit margins.

The applicable governmental authorities may not approve our pending service mark and trademark applications. A failure to obtain trademark registrations in the U.S. and in other countries could limit our ability to obtain and retain our trademarks in those jurisdictions. Moreover, third parties may seek to oppose our applications or otherwise challenge the resulting registrations. In the event that our trademarks are not approved or are successfully challenged by third parties, we could be forced to rebrand our products, which could result in loss of brand recognition and could require us to devote significant resources to rebranding and advertising and marketing new brands. The failure of our patents, trademarks, trade secrets, or confidentiality agreements to protect our proprietary information and other intellectual property, including our processes, apparatuses, technology, trade secrets, trade names and proprietary manufacturing expertise, methods and compounds, could have a material adverse effect on our business and results of operations.

Some of our intellectual property has been or will be discovered, conceived or developed through research funded by the Canadian government and thus may be subject to federal regulations providing for certain rights for the Canadian government or imposing certain obligations on us, such as limitations on exploiting such intellectual property outside of Canada. Compliance with such regulations may limit our exclusive rights and ability to commercialize our products and technology outside of Canada.

We may face patent infringement and other intellectual property claims that could be costly to defend, result in injunctions and significant damage awards or other costs (including indemnification of third parties or costly licensing arrangements, if licenses are available at all) and limit our ability to use certain key technologies in the future or require development of non-infringing products or technologies, which may cause us to incur significant unexpected costs, prevent us from commercializing our products and otherwise harm our business.

The various bioindustrial markets in which we plan to operate are subject to frequent and extensive litigation regarding patents, trade secrets and other intellectual property rights. Many of our competitors have a substantial amount of intellectual property. We cannot guarantee that our processes and products do not and will not infringe issued patents (whether present or future) or other intellectual property rights belonging to others.

From time to time, we may oppose third-party patents that we consider overbroad or otherwise invalid in order to maintain the necessary freedom to operate fully in our various business lines without the risk of being sued for patent infringement. If, however, the oppositions are unsuccessful, we could be liable for infringement or have to take other remedial or curative actions to continue our manufacturing and sales activities with respect to one or more products.

We may also be subject to legal proceedings and claims in the ordinary course of our business, including claims of alleged infringement or misappropriation of the patents, trademarks, trade secrets and other intellectual property rights of third parties by us or our licensees in connection with their use of our products. Intellectual property litigation is expensive and time-consuming, regardless of the merits of any claim, and could divert our management's attention from operating our business.

If we were to discover that our processes, technologies or products infringe or misappropriate the valid intellectual property rights of others, we might need to obtain licenses from these parties or substantially re-engineer our processes, technologies or products in order to avoid infringement. We may not be able to obtain the necessary licenses on acceptable terms, or at all, or be able to re-engineer our processes, technologies or products successfully. Moreover, if we or our licensees are sued for infringement or misappropriation and lose, we could be required to pay substantial damages, indemnify our licensees and/or be enjoined from using or selling the infringing processes, technologies or products. If we incur significant costs to litigate infringement or misappropriation claims or to obtain licenses, or if our inability to obtain required licenses prevents us from using or selling our processes, technologies or products, it could have a material adverse effect on our business and results of operations.

We rely on trade secrets to protect our technology, and our failure to maintain trade secret protection could limit our ability to compete.

We rely on trade secrets to protect some of our technology and proprietary information, especially where we believe patent protection is not appropriate or obtainable. We have security measures in place to safeguard our trade secrets database and limit the access to a need-to-know basis. However, trade secrets can be difficult to protect. The misappropriation or other compromise of our trade secrets may lead to a reduction or loss of our competitive advantages resulting from such trade secrets. Further, litigating a claim that a third party had misappropriated our trade secrets would be expensive and time consuming, and the outcome would be unpredictable. Moreover, if our competitors independently develop similar knowledge, methods and know-how, it will be difficult for us to enforce our rights and our business could be harmed.

Our confidentiality agreements could be breached or may not provide meaningful protection for our trade secrets or proprietary manufacturing expertise. Adequate remedies may not be available in the event of an unauthorized use or disclosure of our trade secrets and manufacturing expertise. Violations by others of our confidentiality agreements and the loss of employees who have specialized knowledge and expertise could harm our competitive position resulting from the exclusive nature of such knowledge and expertise and cause our sales and operating results to decline as a result of increased competition. In addition, others may obtain knowledge of our trade secrets through independent development or other access by legal means.

Other Risks Related to Our Business

Our management has limited experience in operating a public company.

Our executive officers have limited experience in the management of a publicly traded company subject to significant regulatory oversight and reporting obligations under federal securities laws. We may not have adequate personnel with the appropriate level of knowledge, experience and training in the accounting policies, practices or internal control over financial reporting required of public companies in the United States. It is possible that we will be required to expand our employee base and hire additional employees to support our operations as a public company, which will increase our operating costs in future periods.

We are dependent on management and key personnel, and our business could suffer if we fail to retain our key personnel or attract additional highly skilled employees.

Our success depends on the specialized skills of our management team and key operating personnel. This may present particular challenges as we operate in a highly specialized industry sector, which may make replacement of our management team and key operating personnel difficult. A loss of our managers or key employees, or their failure to satisfactorily perform their responsibilities, could have an adverse effect on our business, financial condition, results of operations and prospects.

Our future success will depend on our ability to identify, hire, develop, motivate and retain highly qualified personnel for all areas of our organization, particularly research and development, engineering, operations, and sales. Trained and experienced personnel are in high demand and may be in short supply. Many of the companies that we compete with for experienced employees have greater resources than us and may be able to offer more attractive terms of employment. In addition, we invest significant time and expense in training employees, which increases their value to competitors that may seek to recruit them. We may not be able to attract, develop and maintain the skilled workforce necessary to operate our business, and labor expenses may increase as a result of a shortage in the supply of qualified personnel, which could negatively impact our business, financial condition, results of operations and prospects.

We previously identified a material weakness in our internal control over financial reporting that we have concluded has been remediated. However, we may identify additional material weaknesses in the future or fail to maintain effective internal control over financial reporting, which may result in material misstatements of our consolidated financial statements or cause us to fail to meet our periodic reporting obligations.

In connection with the audit of our consolidated financial statements for the fiscal years ended December 31, 2019 and December 31, 2020, during the course of preparing for the Business Combination, and during the second quarter 2021 and third quarter 2021 interim reviews, we identified a material weakness in our internal control over financial reporting. We implemented and continue to employ measures designed to improve our internal control over financial reporting, which remediated this material weakness in the fourth quarter of 2021. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of its annual or interim financial statements will not be prevented or detected on a timely basis.

If we are unable to successfully remediate any future material weaknesses in our internal control over financial reporting, or if we identify any additional material weaknesses, the accuracy and timing of our financial reporting may be adversely affected, we may be unable to maintain compliance with securities law requirements regarding timely filing of periodic reports in addition to applicable Nasdaq listing requirements, investors may lose confidence in our financial reporting and our stock price may decline as a result. We also could become subject to investigations by Nasdaq, the SEC or other regulatory authorities.

As a public company, we are also required, pursuant to Section 404 of the Sarbanes-Oxley Act, to furnish a report by management on, among other things, the effectiveness of its internal control over financial reporting for our annual reports on Form 10-K to be filed with the SEC. This assessment needs to include disclosure of any material weaknesses identified by management in our internal control over financial reporting. We are required to disclose changes made in our internal control over financial reporting on a quarterly basis. Failure to comply with the Sarbanes-Oxley Act could potentially subject us to sanctions or investigations by the SEC, the applicable stock exchange or other regulatory authorities, which would require additional financial and management resources. In order to evaluate the effectiveness of internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act, management has conducted an assessment, including testing, using the criteria in Internal Control – Integrated Framework, issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”) using the 2013 framework. Our system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect all misstatements.

We are subject to stringent and changing U.S. and foreign laws, regulations, rules, contractual obligations, policies and other obligations related to data privacy and security. Our actual or perceived failure to comply with such obligations could lead to regulatory investigations or actions; litigation; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; loss of customers or sales; and other adverse business consequences.

In the ordinary course of business, we collect, receive, store, process, generate, use, transfer, disclose, make accessible, protect, secure, dispose of, transmit, and share (commonly known as processing) personal data and other sensitive information, including proprietary and confidential business data, trade secrets, and intellectual property. Our data processing activities subject us to various data privacy and security obligations, which can include laws, regulations, guidance, industry standards, external and internal privacy and security policies, contracts, and other obligations that govern the processing of personal data by us and on our behalf.

In the United States, federal, state, and local governments have enacted numerous data privacy and security laws, including data breach notification laws, personal data privacy laws, and consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act), and other similar laws (e.g., wiretapping laws). For example, the California Consumer Privacy Act of 2018 (“CCPA”) imposes obligations on businesses to which it applies, such as providing specific disclosures in privacy notices and affording California residents certain rights related to their personal data and applies to personal information of consumers, business representatives, and employees who are California residents. The CCPA provides for civil penalties of up to \$7,500 per violation and allows private litigants affected by certain data breaches to recover significant statutory damages. In addition, the California Privacy Rights Act of 2020 (“CPRA”), effective January 1, 2023, expands the CCPA, including by establishing a new California Privacy Protection Agency to implement and enforce the CPRA and adding a new right for individuals to correct their personal information. Other states have also enacted data privacy laws, including Virginia and Colorado. In addition, data privacy and security laws have been proposed at the federal, state, and local levels in recent years, which could further complicate compliance efforts.

Outside the United States, an increasing number of laws, regulations, and industry standards apply to data privacy and security. For example, the European Union’s General Data Protection Regulation (“EU GDPR”) and the United Kingdom’s GDPR (“UK GDPR”) impose strict requirements for processing the personal data of individuals located in the European Economic Area (“EEA”) and the UK, respectively. For example, under the EU GDPR, government regulators may impose temporary or definitive bans on data processing, as well as fines of up to €20 million or 4% of annual global revenue, whichever is greater. The GDPR also allows for private litigation related to processing of personal data brought by classes of data subjects or consumer protection organizations authorized at law to represent their interests. Additionally, in Canada, the Personal Information Protection and Electronic Documents Act (“PIPEDA”) and various related provincial laws, as well as Canada’s Anti-Spam Legislation (“CASL”), may apply to our operations. We also have customers in Asia, and may be subject to new and emerging data privacy regimes in Asia, such as China’s Personal Information Protection Law and Japan’s Act on the Protection of Personal Information.

In addition, certain jurisdictions have enacted data localization laws and cross-border personal data transfer laws, which could make it more difficult to transfer information across jurisdictions (such as transferring or receiving personal data that originates in Europe or other jurisdictions). Existing mechanisms that may facilitate cross-border personal data transfers may change or be invalidated.

We are also bound by contractual obligations related to data privacy and security, and our efforts to comply with such obligations may not be successful. We publish privacy policies, marketing materials and other statements, such as compliance with certain certifications or self-regulatory principles, regarding data privacy and security. If these policies, materials or statements are found to be deficient, lacking in transparency, deceptive, unfair, or misrepresentative of our practices, we may be subject to investigation, enforcement actions by regulators or other adverse consequences.

Obligations related to data privacy and security are quickly changing in an increasingly stringent fashion, creating some uncertainty as to the effective future legal framework. Additionally, these obligations may be subject to differing applications and interpretations, which may be inconsistent or in conflict among jurisdictions. Preparing for and complying with these obligations may require us to devote significant resources (including, without limitation, financial and time-related resources). These obligations may necessitate changes to our information technologies, systems, and practices and to those of any third parties that process personal data on our behalf.

Although we endeavor to comply with all applicable data privacy and security obligations, we may at times fail (or be perceived to have failed) to do so. Moreover, despite our efforts, our personnel or third parties upon whom we rely may fail to comply with such obligations, which could negatively impact our business operations and compliance posture. For example, any failure by a third-party processor to comply with applicable law, regulations, or contractual obligations could result in adverse effects, including inability to or interruptions in our ability to operate our business and proceedings against us by governmental entities or others.

If we fail, or are perceived to have failed, to address or comply with data privacy and security obligations, we could face significant consequences. These consequences may include, but are not limited to, government enforcement actions (e.g., investigations, fines, penalties, audits, inspections, and similar); litigation (including class-related claims); additional reporting requirements and/or oversight; bans on processing personal data; and orders to destroy or not use personal data.

Any of these events could have a material adverse effect on our reputation, business, or financial condition, including but not limited to: loss of customers; interruptions or stoppages in our business operations; inability to process personal data or to operate in certain jurisdictions; limited ability to develop or commercialize our products; expenditure of time and resources to defend any claim or inquiry; adverse publicity; or revision or restructuring of our operations.

If our information technology systems or data, or those of third parties upon which we rely, are or were compromised, we could experience adverse consequences resulting from such compromise, including but not limited to regulatory investigations or actions; litigation; fines and penalties; disruptions of our business operations; reputational harm; loss of revenue or profits; loss of customers; and other adverse consequences.

In the ordinary course of our business, we may process proprietary, confidential, and sensitive data, including personal data, intellectual property, and trade secrets (collectively, sensitive information).

Cyberattacks, malicious internet-based activity, and online and offline fraud are prevalent and continue to increase. These threats are becoming increasingly difficult to detect. These threats come from a variety of sources, including traditional computer “hackers,” threat actors, personnel (such as through theft or misuse), sophisticated nation-states, and nation-state-supported actors. Some actors now engage and are expected to continue to engage in cyber-attacks, including without limitation nation-state actors for geopolitical reasons and in conjunction with military conflicts and defense activities. During times of war and other major conflicts, we and the third parties upon which we rely may be vulnerable to a heightened risk of these attacks, including retaliatory cyber-attacks, that could materially disrupt our systems and operations, supply chain, and ability to produce, sell and distribute our products.

We and the third parties upon which we rely may be subject to a variety of evolving threats, including but not limited to social-engineering attacks (including through phishing attacks), malicious code (such as viruses and worms), malware (including as a result of advanced persistent threat intrusions), denial-of-service attacks (such as credential stuffing), credential harvesting, personnel misconduct or error, ransomware attacks, supply-chain attacks, software bugs, server malfunctions, software or hardware failures, loss of data or other information technology assets, adware, telecommunications failures, earthquakes, fires, floods, and other similar threats.

Ransomware attacks, including those perpetrated by organized criminal threat actors, nation-states, and nation-state-supported actors, are becoming increasingly prevalent and severe – particularly for companies like ours that are engaged in manufacturing – and can lead to significant interruptions in our operations, loss of data and income, reputational harm, and diversion of funds. Extortion payments may alleviate the negative impact of a ransomware attack, but we may be unwilling or unable to make such payments due to, for example, applicable laws or regulations prohibiting such payments. Additionally, remote work has become more common and has increased risks to our information technology systems and data, as more of our employees utilize network connections, computers and devices outside our premises or network, including working at home, while in transit and in public locations. Future or past business transactions (such as acquisitions or integrations) could also expose us to additional cybersecurity risks and vulnerabilities, as our systems could be negatively affected by vulnerabilities present in acquired or integrated entities’ systems and technologies. A security incident or other interruption could result in unauthorized, unlawful, or accidental acquisition, modification, destruction, loss, alteration, encryption, disclosure of, or access to our sensitive information. A security incident or other interruption could disrupt our ability (and that of third parties upon whom we rely) to provide our products. Furthermore, we may discover security issues that were not found during due diligence of such acquired or integrated entities, and it may be difficult to integrate companies into our information technology environment and security program.

We rely upon third-party service providers and technologies to operate critical business systems to process sensitive information in a variety of contexts, including, without limitation, third-party providers of cloud-based infrastructure, encryption and authentication technology, employee email, content delivery to customers, manufacturing processing, process orders and invoices, payments, inventory management and other functions. We also depend on these systems to respond to customer inquiries, support our overall internal control process, maintain property, plant and equipment records, and pay amounts due to vendors and other creditors. Our ability to monitor these third parties’ information security practices is limited, and these third parties may not have adequate information security measures in place. While we may be entitled to damages if our third-party service providers fail to satisfy their privacy or security-related obligations to us, any award may be insufficient to cover our damages, or we may be unable to recover such award. In addition, supply-chain attacks have increased in frequency and severity, and we cannot guarantee that third parties’ infrastructure in our supply chain or our third-party partners’ supply chains have not been compromised. We may share or receive sensitive information with or from third parties.

We may expend significant resources or modify our business activities in an effort to protect against security incidents. Certain data privacy and security obligations may require us to implement and maintain specific security measures, industry-standard or reasonable security measures to protect our information technology systems and sensitive information.

While we have implemented security measures designed to protect against security incidents, there can be no assurance that these measures will be effective. We take steps to detect and remediate vulnerabilities, but we may not be able to detect and remediate all vulnerabilities because the threats and techniques used to exploit such vulnerabilities change frequently and are often sophisticated in nature. Therefore, such vulnerabilities could be exploited but may not be detected until after a security incident has occurred. These vulnerabilities pose material risks to our business.

Despite our efforts to identify and remediate vulnerabilities, if any, in our information technology systems, our efforts may not be successful. Further, we may experience delays in developing and deploying remedial measures designed to address any such identified vulnerabilities. Applicable data privacy and security obligations may require us to notify relevant stakeholders of security incidents. Such disclosures are costly, and the disclosures or the failure to comply with such requirements could lead to adverse consequences.

If we (or third parties upon whom we rely) experience a security incident or are perceived to have experienced a security incident, we may experience adverse consequences. These consequences may include: government enforcement actions (for example, investigations, fines, penalties, audits, and inspections); additional reporting requirements and/or oversight; restrictions on processing data (including personal data); litigation (including class claims); indemnification obligations; negative publicity; reputational harm; monetary fund diversions; interruptions in our operations (including availability of data); financial loss; and other similar harms. Security incidents and attendant consequences may negatively impact our ability to grow and operate our business. Our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our data privacy and security obligations. We cannot be sure that our insurance coverage will be adequate or sufficient to protect us from or to mitigate liabilities arising out of our data privacy and security practices, that such coverage will continue to be available on commercially reasonable terms or at all, or that such coverage will pay future claims. In addition to experiencing a security incident, third parties may gather, collect, or infer sensitive information about us from public sources, data brokers, or other means that reveals competitively sensitive details about our organization and could be used to undermine our competitive advantage or market position.

Risks Related to Ownership of Our Shares

Our Certificate of Incorporation provides, subject to limited exceptions, that the Delaware Court of Chancery is the sole and exclusive forum for certain stockholder litigation matters, which could limit our stockholders' ability to obtain a chosen judicial forum for disputes with us or our directors, officers, employees or stockholders.

Our Certificate of Incorporation requires, to the fullest extent permitted by law, that derivative actions brought in our name, actions against directors, officers and employees for breach of fiduciary duty and other similar actions may be brought in the Delaware Court of Chancery or, if that court lacks subject matter jurisdiction, another federal or state court situated in the State of Delaware. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and consented to the forum provisions in our Certificate of Incorporation. In addition, our Certificate of Incorporation provides that the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action under the Securities Act.

This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with us or any of our directors, officers, other employees or stockholders, which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provision contained in our Certificate of Incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, operating results and financial condition.

Our charter documents and Delaware law could prevent a takeover that stockholders consider favorable and could also reduce the market price of our stock.

Our Certificate of Incorporation and Bylaws contain provisions that could delay or prevent a change in control of us. These provisions could also make it more difficult for stockholders to elect directors and take other corporate actions. These provisions include:

- initially providing for a classified Board with staggered, three-year terms;
- authorizing our Board to issue Preferred Stock with voting or other rights or preferences that could discourage a takeover attempt or delay changes in control;
- prohibiting cumulative voting in the election of directors;
- providing that vacancies on our Board may generally be filled only by a majority of directors then in office, even though less than a quorum;
- prohibiting the adoption, amendment or repeal of the Bylaws or the repeal of the provisions of our Certificate of Incorporation regarding the election and removal of directors without the required approval of at least two-thirds of the shares entitled to vote at an election of directors;
- prohibiting stockholder action by written consent;
- limiting the persons who may call special meetings of stockholders; and
- requiring advance notification of stockholder nominations and proposals.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our Board, which is responsible for appointing the members of our management. In addition, the provisions of Section 203 of the General Corporation Law of the State of Delaware ("DGCL") will govern us. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time without the consent of our Board. These and other provisions in our Certificate of Incorporation and our Bylaws under Delaware law could discourage potential takeover attempts, reduce the price investors might be willing to pay in the future for shares of our Common Stock and result in the market price of our Common Stock being lower than it would be without these provisions.

Claims for indemnification by our directors and officers may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.

Our Certificate of Incorporation and Bylaws provide that we will indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law.

In addition, as permitted by Section 145 of the DGCL, the Bylaws and its indemnification agreements that we entered into with our directors and officers provide that:

- we will indemnify our directors and officers for serving us in those capacities or for serving other business enterprises at our request, to the fullest extent permitted by Delaware law. Delaware law provides that a corporation may indemnify such person if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the registrant and, with respect to any criminal proceeding, had no reasonable cause to believe such person's conduct was unlawful;
- we may, in our discretion, indemnify employees and agents in those circumstances where indemnification is permitted by applicable law;
- we will be required to advance expenses, as incurred, to our directors and officers in connection with defending a proceeding, except that such directors or officers shall undertake to repay such advances if it is ultimately determined that such person is not entitled to indemnification;
- we will not be obligated pursuant to our Bylaws to indemnify a person with respect to proceedings initiated by that person against us or our other indemnities, except with respect to proceedings authorized by our Board or brought to enforce a right to indemnification;
- the rights conferred in the Bylaws are not exclusive, and we are authorized to enter into indemnification agreements with our directors, officers, employees and agents and to obtain insurance to indemnify such persons; and
- we may not retroactively amend our Bylaw provisions to reduce our indemnification obligations to directors, officers, employees and agents.

We do not intend to pay dividends for the foreseeable future.

We have never declared or paid any cash dividends on our capital stock and do not intend to pay any cash dividends in the foreseeable future. We expect to retain future earnings, if any, to fund the development and growth of our business. Any future determination to pay dividends on our capital stock will be at the discretion of our Board. In addition, our loan agreements contain restrictions on our ability to pay dividends.

The market price and trading volume of our Common Stock has been and may be volatile and could decline significantly.

The stock markets, including Nasdaq on which we have listed the shares of our Common Stock under the symbol "ORGN," have from time to time experienced significant price and volume fluctuations. Even if an active, liquid and orderly trading market is sustained for our Common Stock, the market price of our Common Stock has been and may be volatile and could decline significantly. Our Common Stock experienced such a decline in August 2023. In addition, the trading volume in our Common Stock may fluctuate and cause significant price variations to occur. If the market price of our Common Stock declines significantly, you may be unable to resell your shares at or above the market price of our Common Stock at which you purchased our Common Stock. We cannot assure you that the market price of Common Stock will not fluctuate widely or decline significantly in the future in response to a number of factors, including, among others, the following:

- the realization of any of the risk factors presented in this Report;
- actual or anticipated differences in our estimates, or in the estimates of analysts, for our revenues, results of operations, level of indebtedness, liquidity or financial condition;
- additions and departures of key personnel;
- failure to comply with the requirements of Nasdaq;
- failure to comply with the Sarbanes-Oxley Act or other laws or regulations;
- future issuances, sales, resales or repurchases or anticipated issuances, sales, resales or repurchases, of our securities;
- publication of research reports about us;
- the performance and market valuations of other similar companies;
- commencement of, or involvement in, litigation involving us;

- broad disruptions in the financial markets, including sudden disruptions in the credit markets;
- speculation in the press or investment community;
- actual, potential or perceived control, accounting or reporting problems;
- changes in accounting principles, policies and guidelines; and
- other events or factors, including those resulting from infectious diseases, health epidemics and pandemics, natural disasters, war, acts of terrorism or responses to these events.

In the past, securities class-action litigation has often been instituted against companies following periods of volatility in the market price of their shares. This type of litigation could result in substantial costs and divert our management's attention and resources, which could have a material adverse effect on us.

In addition, litigation, including securities class action litigation, has often followed announcements of significant business transactions, such as the sale of a company or announcement of any other strategic transaction, or the announcement of negative events, such as negative earnings results. We are, and may in the future be, the target of this type of litigation. These events may also result in investigations by the Securities and Exchange Commission.

Our quarterly operating results may fluctuate significantly and could fall below the expectations of securities analysts and investors due to seasonality and other factors, some of which are beyond our control, resulting in a decline in our stock price.

Our quarterly operating results may fluctuate significantly because of several factors, including:

- labor availability and costs for hourly and management personnel;
- profitability of our products;
- changes in interest rates;
- impairment of long-lived assets;
- macroeconomic conditions, such as inflation and increasing interest rates, which may increase the risk of a potential recession;
- negative publicity relating to products we serve;
- changes in consumer preferences and competitive conditions;
- expansion to new markets; and
- fluctuations in commodity prices.

If securities or industry analysts do not publish or cease publishing research or reports about us, our business, or our market, or if they change their recommendations regarding our Common Stock adversely, then the price and trading volume of our Common Stock could decline.

The trading market for our Common Stock will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market, or our competitors. Accordingly, we must maintain confidence among current and future analysts, ratings agencies and other parties in our long-term financial viability and business prospects. Maintaining such confidence may be particularly complicated by certain factors including those that are largely outside of our control, such as limited operating history, market unfamiliarity, any delays in scaling manufacturing to meet demand and our eventual production and sales performance compared with the market expectations. If any of the analysts who may cover us change their recommendation regarding our Common Stock adversely, or provide more favorable relative recommendations about our competitors, the price of our Common Stock would likely decline. If any analyst who may cover us were to cease coverage of us, which occurred in November 2023 and may occur again in the future, or if any analyst fails to regularly publish reports on us, we could lose in the financial markets, which could cause our stock price or trading volume to decline.

Future issuances of debt securities and equity securities may adversely affect us, including the market price of our Common Stock and may be dilutive to existing stockholders.

In the future, we may incur debt or issue equity ranking senior to our Common Stock. Those securities will generally have priority upon liquidation. Such securities also may be governed by an indenture or other instrument containing covenants restricting its operating flexibility. Additionally, any convertible or exchangeable securities that we issue in the future may have rights, preferences and privileges more favorable than those of our Common Stock. Because our decision to issue debt or equity in the future will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing, nature or success of our future capital raising efforts. As a result, future capital raising efforts may reduce the market price of our Common Stock and be dilutive to existing stockholders.

We have failed, and may continue to fail, to meet the listing standards of Nasdaq, and as a result our common stock may become delisted, which could have a material adverse effect on the liquidity of our common stock.

Our Common Stock and the public warrants that were issued in connection with Artius' initial public offering (the "Public Warrants") are currently listed on Nasdaq. If we fail to continue to satisfy the continued listing requirements of Nasdaq, such as the corporate governance or public float requirements, or the minimum closing bid price requirement, Nasdaq will take steps to delist our common stock. The per share price of our common stock has declined below the minimum bid price threshold required for continued listing. On January 4, 2023, we received a deficiency letter from the Listing Qualifications Department of the Nasdaq (the "Nasdaq Staff"), notifying us that, for the last 30 consecutive business days, the closing bid price for our Class A common stock had closed below the minimum \$1.00 per share required for continued listing on the Nasdaq pursuant to Nasdaq Listing Rule 5550(a)(2) ("Rule 5550(a)(2)").

If we do not regain compliance with Rule 5550(a)(2) by July 2, 2024, we may be afforded a second 180 calendar day period to regain compliance. To qualify, we would be required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for the Nasdaq Capital Market, except for the minimum bid price requirement. In addition, we would be required to notify Nasdaq of our intent to cure the deficiency during the second compliance period.

There are many factors that may adversely affect our minimum bid price. Many of these factors are outside of our control. As a result, we may not be able to sustain compliance with Rule 5550(a)(2) in the long term. Any potential delisting of our common stock from the Nasdaq would likely result in decreased liquidity and increased volatility for our common stock and would adversely affect our ability to raise additional capital or to enter into strategic transactions, in addition to adversely impacting the perception of our financial condition and could cause reputational harm to investors and parties conducting business with us. Any potential delisting of our common stock from the Nasdaq would also make it more difficult for our stockholders to sell our common stock.

If Nasdaq delists our securities from trading on its exchange for failure to meet the listing standards, we and our stockholders could face significant material adverse consequences including:

- a limited availability of market quotations for our securities;
- a determination that our Common Stock is a "penny stock" which will require brokers trading in our Common Stock to adhere to more stringent rules and possibly result in a reduced level of trading activity in the secondary trading market for our securities; or
- a decreased ability to issue additional securities or obtain additional financing in the future.

Additionally, if our securities are not listed on, or become delisted from, Nasdaq for any reason, and are quoted on the OTC Bulletin Board, an inter-dealer automated quotation system for equity securities that is not a national securities exchange, the liquidity and price of our securities may be more limited than if we were quoted or listed on Nasdaq or another national securities exchange. You may be unable to sell your securities unless a market can be established or sustained.

In the event of a delisting, we expect we would take actions to restore our compliance with Nasdaq Marketplace Rules, but we can provide no assurances that the listing of our common stock would be restored, that our common stock will remain above the Nasdaq minimum bid price requirement or that we otherwise will remain in compliance with the Nasdaq Marketplace Rules.

The National Securities Markets Improvement Act of 1996, which is a federal statute, prevents or preempts the states from regulating the sale of certain securities, which are referred to as "covered securities." Because Common Stock and Public Warrants are listed on Nasdaq, they are covered securities. Although the states are preempted from regulating the sale of our securities, the federal statute does allow the states to investigate companies if there is a suspicion of fraud, and, if there is a finding of fraudulent activity, then the states can regulate or bar the sale of covered securities in a particular case.

While we are not aware of a state, other than the State of Idaho, having used these powers to prohibit or restrict the sale of securities issued by blank check companies, certain state securities regulators view blank check companies unfavorably and might use these powers, or threaten to use these powers, to hinder the sale of securities of blank check companies in their states. Further, if we were no longer listed on Nasdaq, our securities would not be covered securities and we would be subject to regulation in each state in which we offer our securities.

Sales of a substantial number of shares of our common stock by our existing stockholders could cause the price of our common stock to decline.

At any time, sales of a substantial number of shares of our common stock in the public market could occur, or there could be a perception in the market that the holders of a large number of shares of common stock intend to sell shares, and any such event could reduce the market price of our common stock. Substantially all of the shares of our common stock outstanding and shares issued upon the exercise of stock options outstanding under our equity incentive plans, subject to applicable securities law restrictions and excluding shares of restricted stock that will remain unvested, may be able to be sold in the public market. We are unable to predict the effect that sales may have on the prevailing market price of Common Stock and Public Warrants.

To the extent our Warrants are exercised, additional shares of Common Stock will be issued, which will result in dilution to the holders of Common Stock and increase the number of shares eligible for resale in the public market. Sales, or the potential sales, of substantial numbers of shares in the public market by the selling securityholders could increase the volatility of the market price of Common Stock or adversely affect the market price of Common Stock.

There is no guarantee that the Warrants will be in the money at the time they become exercisable, and they may expire worthless.

The exercise price for our Warrants is \$11.50 per share of Common Stock. There is no guarantee that the Warrants will be in the money following the time they become exercisable and prior to their expiration, and as such, the Warrants may expire worthless. Our Warrants became exercisable on July 25, 2021.

We may amend the terms of the Warrants in a manner that may be adverse to holders with the approval by the holders of at least 50% of the then-outstanding Public Warrants. As a result, the exercise price of your Warrants could be increased, the exercise period could be shortened and the number of shares of our Common Stock purchasable upon exercise of a Warrant could be decreased, all without your approval.

Our Warrants are issued in registered form under the Warrant Agreement between the warrant agent and us. The Warrant Agreement provides that the terms of the Warrants may be amended without the consent of any holder to cure any ambiguity or correct any defective provision, but requires the approval by the holders of at least 50% of the then-outstanding Public Warrants to make any change that adversely affects the interests of the registered holders of Public Warrants. Accordingly, we may amend the terms of the Public Warrants in a manner adverse to a holder if holders of at least 50% of the then-outstanding Public Warrants approve of such amendment. Although our ability to amend the terms of the Public Warrants with the consent of at least 50% of the then-outstanding Public Warrants is unlimited, examples of such amendments could be amendments to, among other things, increase the exercise price of the Warrants, convert the Warrants into cash or stock (at a ratio different than initially provided), shorten the exercise period or decrease the number of shares of our Common Stock purchasable upon exercise of a Warrant.

We may redeem unexpired Warrants prior to their exercise at a time that is disadvantageous to warrant holders, thereby making such Warrants worthless.

We have the ability to redeem outstanding Warrants at any time after they become exercisable and prior to their expiration, at a price of \$0.01 per Warrant, provided that the last reported sales price of our Common Stock equals or exceeds \$18.00 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations and the like) for any 20 trading days within a 30 trading-day period ending on the third trading day prior to the date on which we give proper notice of such redemption and provided certain other conditions are met. If and when the Warrants become redeemable by us, we may exercise our redemption right even if we are unable to register or qualify the underlying securities for sale under all applicable state securities laws. Redemption of the outstanding Warrants could force you (a) to exercise your Warrants and pay the exercise price therefor at a time when it may be disadvantageous for you to do so, (b) to sell your Warrants at the then-current market price when you might otherwise wish to hold your Warrants or (c) to accept the nominal redemption price which, at the time the outstanding Warrants are called for redemption, is likely to be substantially less than the market value of your Warrants.

In addition, we may redeem your Warrants after they become exercisable for a number of shares of Common Stock determined based on the redemption date and the fair market value of our Common Stock. Any such redemption may have similar consequences to a cash redemption described above. In addition, such redemption may occur at a time when the Warrants are “out-of-the-money,” in which case, you would lose any potential embedded value from a subsequent increase in the value of our Common Stock had your Warrants remained outstanding.

We may issue additional shares of Common Stock or other equity securities without shareholder approval, which would dilute shareholders’ ownership interests and may depress the market price of the Common Stock.

As of December 31, 2023 we have Warrants outstanding to purchase an aggregate of 35,476,627 shares of Common Stock. Pursuant to the Merger Agreement, we may issue up to 25,000,000 shares of our Common Stock as Earnout Shares. In addition, pursuant to the 2021 EIP Plan and the ESPP, we may issue an aggregate of up to 30,004,203 shares of Common Stock, which amount is subject to increase from time to time. We may also issue additional shares of Common Stock or other equity securities of equal or senior rank in the future in connection with, among other things, future acquisitions or repayment of outstanding indebtedness, without stockholder approval, in a number of circumstances. The issuance of additional shares or other equity securities of equal or senior rank would have the following effects:

- existing stockholders’ proportionate ownership interest in us will decrease;
- the amount of cash available per share, including for payment of dividends in the future, may decrease;
- the relative voting strength of each previously outstanding share of Common Stock may be diminished; and
- the market price of the Common Stock may decline.

Item 1B. Unresolved Staff Comments

None.

Item 1C. Cybersecurity

Risk management and strategy

We have implemented and maintain information security processes designed to identify, assess, and manage material risks from cybersecurity threats to our critical computer networks, third-party hosted services, communications systems, hardware and software, and our critical data, including intellectual property and confidential information that is proprietary, strategic, or competitive in nature (“Information Systems and Data”).

The Director of IT and General Counsel are responsible for helping to identify, assess and manage the Company’s cybersecurity threats and risks by monitoring and evaluating our threat environment using, among other things, manual processes, automated tools, internal audits, threat and vulnerability assessments, evaluating threats reported to us, evaluating our and our industry’s risk profile, and subscribing to reports and services that identify cybersecurity threats.

Depending on the environment, we implement and maintain various technical, physical, and organizational measures, processes, standards, and policies designed to manage and mitigate material risks from cybersecurity threats to our Information Systems and Data. These include, for example, an incident response plan and team, data encryption, risk assessments, network security and access controls, physical security, asset management, tracking, and disposal, systems monitoring, employee training including tabletop exercises and other simulated cybersecurity threats, and cybersecurity insurance. In addition, to oversee and identify any risks associated with our use of third-party service providers, we review Service Organization Controls (“SOC”) reports of such third-party service providers when onboarding the provider and annually thereafter. We also maintain proper essential information sharing and access controls, aiding in the secure exchange of information between us and our third-party service providers.

Assessment and management of material risks from cybersecurity threats are integrated into the Company’s overall risk management processes. For example, the Director of IT coordinates with our General Counsel and representatives of the Company’s departments and teams to evaluate the Company’s risk profile and identify and mitigate cybersecurity threats. Our General Counsel evaluates material risks from cybersecurity threats and reports to both the Company’s executive management team and the Audit Committee of the Board of Directors. We also use third-party service providers to assist us from time to time to identify, assess, and manage material risks from cybersecurity threats, including for example cybersecurity consultants, data backup and recovery providers, cyber insurers, and legal counsel.

For a description of the risks from cybersecurity threats that may materially affect the Company and how they may do so, see our risk factors under Part 1. Item 1A. Risk Factors in this Annual Report on Form 10-K.

Governance

Our Board of Directors addresses the Company’s cybersecurity risk management as part of its general oversight function and has delegated to the Audit Committee primary responsibility for monitoring the Company’s cybersecurity risk management processes, including mitigation of cybersecurity threats.

Our cybersecurity risk assessment and management processes are implemented and maintained by certain members of the Company’s management. In particular, the Director of IT and General Counsel are responsible for hiring appropriate personnel, helping to integrate cybersecurity risk considerations into the Company’s overall risk management strategy, and communicating key priorities to relevant personnel, helping prepare for cybersecurity incidents, approving cybersecurity processes and technologies, and reviewing security assessments and other security-related reports. In addition, the General Counsel provides regular reports to the Audit Committee concerning the Company’s cybersecurity posture and significant threats and risks and the processes to address them.

Our security incident response plan (“SIRP”) is designed to escalate certain cybersecurity incidents to members of the Company’s executive management team depending on the circumstances. The General Counsel, Director of IT, and relevant department heads work with our incident response team to help the Company mitigate and remediate cybersecurity incidents of which they are notified. The SIRP provides for escalation of potentially material cybersecurity incidents to the Audit Committee.

Item 2. Properties

Our corporate headquarters, pilot-scale plant and research and development laboratories are located in West Sacramento, California, where we occupy approximately 41,443 square feet of office, plant and laboratory space. Our leases for this facility were amended in August 2023 and will expire on December 31, 2033. We believe that the facility that we currently lease is adequate for our needs for the immediate future and that, should it be necessary, we can lease additional space to accommodate any future growth.

We also own a production facility in Sarnia, Ontario, Canada. This facility, Origin 1, is on approximately two acres of land and contains a construction trailer complete with approximately 15,476 square feet of office space. The land is owned and the offices are leased by our wholly owned subsidiary, Origin Materials Canada Pioneer Limited.

We completed the purchase of approximately 183 acres in Geismar, Louisiana for Origin 2 in third quarter 2022 in the amount of \$8.5 million.

Item 3. Legal Proceedings

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Part II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our Common Stock and Public Warrants are listed on NASDAQ under symbols “ORGN” and “ORGNW”, respectively. The following table sets forth the high and low sales price per share of our common stock as reported in the consolidated transaction reporting system.

Holders

As of close of business on February 23, 2024, there were 37 holders of record of our Common Stock and 1 holder of record for our Public Warrants. The actual number of holders of our Common Stock and Public Warrants is greater than the number of record holders, and includes holders who are beneficial owners, but whose shares or warrants are held in street name by brokers or other nominees.

Dividend Policy

We have never declared or paid any dividends and do not anticipate paying any dividends on our common stock in the foreseeable future.

Securities Authorized for Issuance Under Equity Compensation Plans

Information about our equity compensation plans in Item 12 of Part III of this Annual Report is incorporated by reference to the information to be set forth in our Proxy Statement.

Recent Sales of Unregistered Equity Securities

None.

Issuer Purchases of Equity Securities

None.

Item 6. Reserved

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

Overview

Origin is an innovative materials company with a mission to enable the world’s transition to sustainable materials. We have pioneered a technology that has the potential to replace petroleum-based materials with decarbonized materials in a wide range of end products, such as food and beverage packaging, clothing, textiles, plastics, car parts, carpeting, tires, adhesives, soil amendments, fuels, and more. We have also developed other products that can enhance sustainability, such as our 100% polyethylene terephthalate (“PET”) circular caps and closures that can enable fully-recyclable PET beverage containers and reduce waste through light-weighting, while providing enhanced performance such as greater oxygen and CO2 barrier properties that can increase shelf-life. These products complement our biomass conversion technology.

Our biomass conversion technology can convert sustainable feedstocks such as sustainably harvested wood residues, agricultural waste, wood waste, and even corrugated cardboard into materials and products that are currently made from fossil feedstocks such as petroleum and natural gas. The ability of our technology to use sustainable feedstocks that are not used in food production differentiates our technology from other sustainable materials companies that are limited to feedstocks used in food production such as vegetable oils or high fructose corn syrup and other sugars.

We believe that products made using Origin’s biomass conversion technology at commercial scales can compete directly with petroleum-derived products on both performance and price while being sustainable. Due to abundant and renewable wood supplies that have historically stable pricing, our cost of production when using these feedstocks is expected to be more stable than potential competing platforms that use other types of feedstocks. We believe that end products made at commercial scale using our biomass conversion technology and wood feedstocks will have a significant unit cost advantage over products made from other low carbon feedstocks.

We have developed a proprietary biomass conversion technology to convert biomass, or plant-based carbon, into the versatile “building block” chemicals CMF and hydrothermal carbon (“HTC”), which we collectively refer to as Furanic Intermediates, as well as oils and extractives and other co-products. At commercial scale, our biomass conversion technology with wood feedstocks is expected to be able to produce CMF and HTC with a negative carbon footprint. We believe these chemicals can replace petroleum-based inputs, lowering the carbon footprint of a wide range of materials without increasing cost or sacrificing performance.

The following discussion and analysis should be read in conjunction with our consolidated financial statements and the related notes appearing elsewhere in this Annual Report. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth in the sections titled “Cautionary Note Regarding Forward-Looking Statements” and “Risk Factors” as set forth elsewhere in this Annual Report. Unless the context otherwise requires, references in this section to “Legacy Origin”, “Origin”, “the Company”, “we”, “us” and “our” refer to the business and operations of Legacy Origin and its consolidated subsidiaries prior to the Business Combination and to Origin Materials, Inc. and its consolidated subsidiaries, following the Closing.

Business Environment and Trends

Our business and financial performance depend on worldwide economic conditions. We face global macroeconomic challenges, particularly in light of increases and volatility in interest rates, uncertainty in markets, inflationary trends, navigating complex and evolving regulatory frameworks, and the dynamics of the global trade environment. In addition to any lingering economic impacts of the COVID-19 pandemic, we have observed market uncertainty, civil unrest, global sanctions resulting from geopolitical conflicts, bank failures, increasing inflationary pressures, supply constraints and labor shortages in the past few quarters. These market dynamics, which we expect will continue into the foreseeable future, have and may continue to impact our business and financial results, including costs and revenues.

We believe demand for our products, which our signed offtake agreements and capacity reservations have shown to be strong and broad based, is likely to continue to exceed supply for the foreseeable future. Our commercial strategy has, accordingly, evolved from demand generation to revenue generation and the development of higher margin products.

We continue to see favorable tailwinds for our technology and business model. We are actively exploring several federal programs funded by the Inflation Reduction Act, including the Department of Energy’s Advanced Industrial Facilities Deployment Program, or AIFD, and the Section 48C Advanced Manufacturing Tax Credit. These and other programs, many of which include climate and supply chain related directives, could provide positive momentum for us in securing additional funding for building plants and deploying our platform.

Product development progress remains strong. We continue to expand our IP position and engage in developmental activities with technical, strategic, and supply chain partners. We have demonstrated a significant performance milestone in our carbon black program, validating the suitability of our HTC-derived carbon black for automotive tires and mechanical rubber goods. Our carbon black blends were shown to meet or exceed fossil-based N660 performance for these applications and the results suggest they may be used more broadly, as well. With our first commercial plant, Origin 1, which commenced commercial-scale production in October 2023, we expect our ability to make production samples to increase, further bolstering our ability to advance product development objectives, including through funded joint development programs.

Key Factors and Trends Affecting Origin’s Operating Results

We are in the early stages of generating revenue. We believe that our performance and future success depend on several factors that present significant opportunities for us but also pose risks and challenges, including those discussed below and under “Risk Factors” appearing elsewhere in this Annual Report.

Basis of Presentation

We currently conduct our business through one operating segment and our historical results are reported under accounting principles generally accepted in the United States of America (“U.S. GAAP”) and in U.S. Dollars. Upon commencement of commercial operations, we expect to expand our operations substantially, including in the United States and Canada, and as a result, we expect Origin’s future results to be sensitive to foreign currency transaction and translation risks and other financial risks that are not reflected in Origin’s historical financial statements.

Components of Results of Operations

We are in the early stages of recognizing revenue and our historical results may not be indicative of our future results for reasons that may be difficult to anticipate. Accordingly, the drivers of our future financial results, as well as the components of such results, may not be comparable to our historical or projected results of operations.

Revenues

We evaluate financial performance and make resource allocation decisions based upon the results of our single operating and reportable segment. We generally procure, will produce, and sell product to be utilized in the manufacturing of finished products, for which we recognize revenue upon shipment. Our service contracts generally pay us at the commencement of the agreement and then at additional intervals as outlined in each contract. We recognize revenue as we satisfy the related performance obligations.

Cost of Revenues

Cost of revenues for product sales consists primarily of cost associated with the purchase of finished goods. Cost of revenues for service agreements is based on the actual cost incurred, which mainly consists of the direct cost from vendors and overhead costs such as payroll and benefit related to our employees who provide the services to customers.

Research and Development Expenses

To date, our research and development expenses have consisted primarily of development of CMF, HTC, levulinic acid, furfural, and oils and extractives, and the conversion of those chemical building blocks into products familiar to and desired by our customers, such as carbon black, furandicarboxylic acid (“FDCA”), polyethylene furanoate (“PEF”), paraxylene (“PX”), polyethylene terephthalate (“PET”), and PETF, which is a PET co-polyester incorporating FDCA and offering performance advantages over traditional PET plastic. Our research and development expenses also include personnel-related costs like stock-based compensation and professional fees, investments associated with the operations of the Origin 1 plant and planning and project development of the Origin 2 plant, including the material and supplies to support product development and process engineering efforts.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel-related costs, including stock-based compensation and professional fees, including, the costs of accounting, audit, legal, regulatory and tax compliance.

Gain in Fair Value of Common Stock Warrants Liability

The gain in fair value of common stock warrants liability consists of the change in fair value of the Warrants (the Public Warrants together with the Private Placement Warrants, the “Common Stock Warrants” or “Warrants”). We expect to incur incremental income (expenses) for the fair value adjustments for the outstanding common stock warrants liability at the end of each reporting period or through the exercise of the warrants.

Gain in Fair Value of Earnout Liability

The gain in fair value of earnout liability consists of the change in fair value of the future contingent equity shares related to the Business Combination. We recognize incremental income (expense) for the fair value adjustments of the outstanding liability at the end of each reporting period.

Other Income (Expenses)

Our other income (expenses) consists of income from governmental grant programs, interest expenses for notes payable and other liabilities, interest income on marketable securities, realized gain or loss on marketable securities, investment fee, and income or expenses related to changes in the fair value of derivative assets and liabilities. We expect to incur incremental income (expenses) for the fair value adjustments of these assets and liabilities at the end of each reporting period.

Income Tax Expenses

Our income tax expenses consist of an estimate for U.S. federal, state, and foreign income taxes based on enacted rates, as adjusted for allowable credits, deductions, uncertain tax positions, changes in deferred tax assets and liabilities, and changes in the tax law. We maintain a valuation allowance against the full value of our U.S. federal and state, net deferred tax assets and certain foreign net deferred tax assets because we believe the recoverability of the tax assets is not more likely than not. We have released the valuation allowance previously recorded against some of the foreign net deferred tax assets as we believe it is more likely than not they will be recovered.

Results of Operations

Comparison of the year ended December 31, 2023 and 2022

The following table summarizes the Company's results of operations with respect to the items set forth in such table for the year ended December 31, 2023 and 2022 together with the change in such items in dollars and as a percentage.

<u>(in thousands)</u>	Year Ended December 31,		Variance \$	Variance %
	2023	2022		
Revenues:				
Products	\$ 23,896	\$ —	\$ 23,896	NA
Services	4,909	—	4,909	NA
Total revenues	28,805	—	28,805	NA
Cost of revenues (exclusive of depreciation and amortization shown separately below)	23,591	—	23,591	NA
Operating expenses				
Research and development	21,351	14,141	7,210	51 %
General and administrative	35,382	24,095	11,287	47 %
Depreciation and amortization	3,363	711	2,652	373 %
Total operating expenses	60,096	38,947	21,149	54 %
Loss from operations	(54,882)	(38,947)	(15,935)	41 %
Other income (expenses)				
Interest income	6,303	8,825	(2,522)	(29)%
Interest expenses	(131)	—	(131)	NA
Gain (loss) in fair value of derivatives	69	(443)	512	(116)%
Gain in fair value of common stock warrants liability	29,531	21,988	7,543	34 %
Gain in fair value of earnout liability	40,983	85,437	(44,454)	(52)%
Other income, net	838	1,709	(871)	(51)%
Total other income, net	77,593	117,516	(39,923)	(34)%
Income before income tax benefits	\$ 22,711	\$ 78,569	\$ (55,858)	(71)%

Revenues

Revenues increased \$28.8 million during the year ended December 31, 2023 compared to 2022. The increase in revenue is primarily attributable to our supply chain activation program. The Company did not recognize any revenue prior to 2023.

Cost of Revenues

Cost of revenues increased \$23.6 million during the year ended December 31, 2023 compared to 2022. The increase is primarily attributable to the purchases associated with the Company's supply chain activation program. The Company had no cost of revenues prior to 2023.

Research and Development Expenses

Research and development expenses increased \$7.2 million, or 51%, in 2023 compared to 2022. The increase is attributable to additional efforts in technical business development, patent advancement, product development and general research, mainly generated from additional headcount and related payroll costs.

General and Administrative Expenses

General and administrative expenses increased \$11.3 million, or 47%, in 2023 compared to 2022. The increase is primarily driven by additional headcount, as well as facilities costs and external professional services related to legal, audit and regulatory compliance. In addition, the Company expensed the costs for process improvement associated with Origin 1 and is no longer capitalizing those expenses after Origin 1 was completed during the fourth quarter of 2023.

Depreciation and Amortization Expenses

Depreciation and amortization expenses increased \$2.7 million, or 373%, in 2023 compared to 2022. The increase is mainly driven by the completion of Origin 1 during fourth quarter when we moved the assets from construction in process to the proper categories and began depreciating.

Interest income

Interest income decreased \$2.5 million, or (29)%, in 2023 compared to 2022. The decrease is mainly driven by the amortization of premiums and discounts on marketable securities.

Gain (Loss) in fair value of derivatives, common stock warrants liability, and earnout liability

The Company recognized an aggregate gain related to the gain (loss) in fair values of derivatives, common stock warrants liability, and earnout liability of \$70.6 million during year ended December 31, 2023 compared to an aggregate gain of \$107.0 million during 2022. The aggregate gain related to the change in fair values decreased \$36.4 million during year ended December 31, 2023. The decrease in the gain related to the change in fair value of earnout liability of \$44.4 million is the result of the revaluation of the earnout liability with the fair value of such liability decreasing less in 2023 as compared to 2022. The \$7.5 million increase in the gain from change in fair value of common stock warrants liability is the result of a larger decrease in the underlying fair value of common stock warrants in 2023 as compared to 2022. The fair values are driven by the value of the Company's stock price. The increase of \$0.5 million in the gain from change in fair value of derivative liabilities was associated with our foreign currency exchange purchases or sales.

Non-GAAP Measures

To provide investors with additional information in connection with our results as determined in accordance with U.S. GAAP, we disclose Adjusted Earnings before Interest, Taxes, Depreciation, and Amortization ("Adjusted EBITDA") as a non-GAAP measure. Adjusted EBITDA is a key metric used by management and our board of directors (the "Board") to assess our financial performance. Adjusted EBITDA is also frequently used by analysts, investors, and other interested parties to evaluate companies in our industry, when considered alongside other U.S. GAAP measures. We use Adjusted EBITDA to supplement U.S. GAAP measures of performance to evaluate the effectiveness of our business strategies, make budgeting decisions and compare our performance against that of other companies using similar measures. This measure is not a financial measure calculated in accordance with U.S. GAAP, and it should not be considered as a substitute for net income, operating income, or any other measure calculated in accordance with U.S. GAAP, and may not be comparable to similarly titled measures reported by other companies.

Adjusted EBITDA

We believe that the presentation of Adjusted EBITDA is appropriate to provide additional information to investors about our operating profitability adjusted for certain non-cash items, non-routine items that we do not expect to continue at the same level in the future, as well as other items that are not core to our operations. Further, we believe Adjusted EBITDA provides a meaningful measure of operating profitability because we use it for evaluating our business performance, making budgeting decisions, and comparing our performance against that of other peer companies using similar measures.

We define Adjusted EBITDA as net income or loss adjusted for certain non-cash and non-recurring items, including (i) stock-based compensation expense, (ii) depreciation and amortization, (iii) interest income, (iv) interest expenses, (v) change in fair value of derivative, (vi) change in fair value of common stock warrants liability, (vii) change in fair value of earnout liability, (viii) other income, net, (ix) income tax benefits, and (x) cash severance.

(in thousands)	Year ended December 31,	
	2023	2022
Net income	\$ 23,798	\$ 78,569
Stock based compensation ⁽¹⁾	9,400	7,235
Depreciation and amortization	3,363	711
Interest income	(6,303)	(8,825)
Interest expenses	131	—
(Gain) loss in fair value of derivatives	(69)	443
Gain in fair value of common stock warrants liability	(29,531)	(21,988)
Gain in fair value of earnout liability	(40,983)	(85,437)
Other income, net	(838)	(1,709)
Income tax benefits	(1,087)	—
Cash severance ⁽¹⁾	484	—
Adjusted EBITDA	\$ (41,635)	\$ (31,001)

(1) Please see Note 15- Stockholder's Equity to the consolidated financial statements in Item 8 of this Annual Report for further details.

Liquidity and Capital Resources

Sources of Liquidity

Since inception, we have financed our operations principally from the sales and issuances of common stock, and governmental grant programs. Origin had \$158.3 million in cash, cash equivalents, and marketable securities as of December 31, 2023. Our cash equivalents are invested primarily in U.S. Treasury money market funds and our marketable securities are primarily U.S. government and agency securities, corporate bonds, asset-backed securities, foreign government and agency securities, and municipal bonds.

We recently began generating revenue from our business operations. Our ability to successfully develop the products, commence commercial operations and expand the business will depend on many factors, including our ability to meet the working capital needs, the availability of equity or debt financing and, over time, our ability to generate cash flows from operations.

We will require a significant amount of cash for capital expenditures as we invest in the operation of Origin 1 and development of the Origin 2 plant, and additional research and development. In addition to our cash on hand, we anticipate that we will need substantial additional project financing, including from strategic partners, and government incentives to meet our financial projections, execute our growth strategy and expand our manufacturing capability. We anticipate that we will also enter into additional strategic partnerships to finance the construction of our Origin 2 plant. Our ability to obtain financing for the construction of future plants may depend in part on our ability to first enter into customer agreements sufficient to demonstrate adequate demand to justify the construction of such plants. We may also raise additional capital through equity offerings or debt financings, as well as through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties. Our future capital requirements will depend on many factors, including actual construction costs of the Origin 2 plant and the operation cost of Origin 1, changes in the costs in our supply chain, expanded operating activities and our ability to secure customers. If our financial projections are inaccurate, we may need to seek additional equity or debt financing from outside sources, which may not be available on acceptable terms, if at all. If we are unable to raise additional capital when required, our business, financial condition and results of operations would be harmed.

We expect to continue to incur operating losses in the near term as our operating and capital expenses are needed to support the growth of the business. We expect that our general and administrative expenses will continue to increase as we develop our all-PET cap and closure business, increase our spending on strategic partnerships, increase our sales and marketing activities, produce materials and operate as a public company.

Indebtedness

As of December 31, 2023 and 2022, we had \$7.3 million and \$7.2 million of indebtedness under a Canadian government program, respectively, of which zero and \$0.8 million was received during the year ended December 31, 2023 and 2022, respectively. Additionally, as of December 31, 2023, we had liability balances consisting of \$3.5 million notes payable, long-term, \$1.7 million notes payable, short-term, \$0.8 million unpaid accrued interest recorded in other liabilities, current, \$5.7 million other liabilities, long-term with unpaid accrued interest and a \$2.5 million customer prepayment recorded in

other liabilities, long-term. As of December 31, 2022, we had liability balances consisting of \$5.8 million notes payable with unpaid accrued interest, \$5.4 million other liabilities, long-term with unpaid accrued interest and a \$2.5 million customer prepayment recorded in other liabilities, long-term.

In November 2016, Legacy Origin received a \$5.0 million prepayment from a legacy stockholder for product from Origin 1 pursuant to an "Offtake Agreement," a type of agreement that generally provided for binding take-or-pay commitments to purchase certain annual volumes of product from our planned manufacturing facilities at specified prices, subject to satisfaction of certain conditions precedent. The prepayment was to be credited against the purchase of products over the term of the agreement. The prepayment was secured by a promissory note to be repaid in cash in the event that the prepayment could not be credited against the purchase of product, for example, if Origin 1 were never constructed. The promissory note was collateralized substantially by Origin 1 and other assets of Origin Materials Canada Pioneer Limited. In May 2019, Legacy Origin and the legacy stockholder amended the Offtake Agreement and promissory note. The amendment added accrued interest of \$0.2 million to the principal balance of the prepayment and provided for the prepayment amount to be repaid in three annual installments rather than being applied against the purchase of product from Origin 1. On August 1, 2022, Legacy Origin and the legacy stockholder amended the note to provide for repayment in three installments consisting both principal and interest of \$2.7 million on September 1, 2024, \$1.9 million on September 1, 2025, and \$1.8 million on September 1, 2026 and to allow the legacy stockholder to offset amounts owed for the purchase of product from Legacy Origin's Origin 1 facility against amounts due under the note. At December 31, 2023, the outstanding note principal balance was \$5.2 million of which \$3.5 million was included in notes payable, long-term and \$1.7 million was included in notes payable, short-term and the outstanding accrued interest of \$0.8 million was included in other liabilities, current. At December 31, 2022, the note principal balance was \$5.2 million with outstanding accrued interest of \$0.6 million.

Prepayments

In November 2016, Legacy Origin received a \$5.0 million prepayment from a legacy stockholder for product from Origin 1 pursuant to an Offtake Agreement. The prepayment was to be credited against the purchase of products from Origin 1 over the term of the Offtake Agreement, specifically by applying a credit to product purchases each month over the first five years of operation of Origin 1 up to 150% of the prepayment amount—i.e., \$7.5 million. The application of the credit to purchases would continue until the foregoing amount was fully repaid. The prepayment is secured by a note to be repaid in cash in the event the prepayment cannot be credited against the purchase of product, for example, if Origin 1 were never constructed. The note is collateralized substantially by Origin 1 and other assets of Origin Materials Canada Pioneer Limited. If repaid in cash, the note bears an annual interest rate of the three-month Secured Overnight Financing Rate ("SOFR") plus 0.25% (5.61% at December 31, 2023) and matures five years from the commercial operation date of Origin 1. In February 2024, Legacy Origin and the customer amended the agreement to provide for repayment in three installments consisting of approximately \$2.2 million on March 1, 2024, \$1.6 million on September 1, 2024, and \$2.1 million on March 1, 2025 instead of applying a credit to product purchases under the Offtake Agreement. At December 31, 2023 and December 31, 2022 the total amount outstanding was \$5.1 million plus accrued interest of \$0.6 million and \$0.3 million, respectively, was recorded in other liabilities, long-term.

In September 2019, Legacy Origin entered into a \$5.0 million prepayment agreement with a counterparty for the purchase of products from Origin 2. The prepayment is to be made in two equal installments: the first \$2.5 million was in October 2019 and the remaining \$2.5 million is due within 30 days of the customer confirming that a sample from Origin 1 meets the customer's specifications. Origin and the customer agreed to work in good faith to execute an Offtake Agreement, the agreed terms of which are set forth in the prepayment agreement, whereby 100% of the prepayment will be applied against future purchases. The prepayment agreement provides the customer a capacity reservation of up to a specified annual volume of product from Origin 1 for a term of ten years, pursuant to the terms of an Offtake Agreement. At December 31, 2023 and 2022, the total amount outstanding on this agreement was \$2.5 million was recorded in other liabilities, long-term. On February 5, 2024, the parties entered into a memorandum of understanding by which they agreed that the counterparty would be released from its obligation to pay the remaining \$2.5 million of the prepayment and that Legacy Origin would refund the first \$2.5 million within a certain period after reporting in its Quarterly Report on Form 10-Q that its cash on hand has crossed a specified threshold.

Cash Flows for the year ended December 31, 2023 Compared to the year ended December 31, 2022

The following table shows a summary of cash flows for the year ended December 31, 2023 and 2022:

(in thousands)	Year ended December 31,	
	2023	2022
Net cash used in operating activities	\$ (60,355)	\$ (26,092)
Net cash provided by investing activities	26,232	88,847
Net cash provided by financing activities	146	1,248
Effects of foreign exchange rate changes on the balance of cash and cash equivalents, and restricted cash held in foreign currencies	1,131	(2,782)
Net (decrease) increase in cash and cash equivalents, and restricted cash	\$ (32,846)	\$ 61,221

Cash Used in Operating Activities

Net cash used in operating activities for the year ended December 31, 2023 was \$60.4 million. Non-cash income recognized for the \$41.0 million change in the fair value of earnout liability and \$29.5 million for the change in fair value of common stock warrants liability were deducted from net income of \$23.8 million, in addition to the \$15.2 million increase in accounts and other receivables and the \$12.8 million increase in other long-term assets. These adjustments were partially offset by additions for non-cash charges of \$9.4 million for stock-based compensation and \$3.4 million for depreciation and amortization, as well as \$5.9 million for the increase in accrued expenses.

Net cash used in operating activities for the year ended December 31, 2022 was \$26.1 million. Non-cash income recognized for the \$85.4 million change in the fair value of earnout liability and \$22.0 million for the change in fair value of common stock warrants liability were deducted from net income of \$78.6 million, in addition to the \$1.7 million increase in accounts and other receivables and the \$5.0 million increase in other long-term assets. These adjustments were partially offset by additions for non-cash charges of \$7.2 million for stock-based compensation and \$0.7 million for depreciation and amortization.

Cash Provided by Investing Activities

Net cash provided by investing activities was \$26.2 million for the year ended December 31, 2023, compared to net cash provided by investing activities of \$88.8 million in 2022. Our cash flows from investing activities, to date, have been comprised of purchases of property and equipment, intangible assets, and purchases and maturities of our marketable securities. We expect the costs to acquire property, plant and equipment to decrease substantially following completion of construction of Origin 1. The change was primarily related to increased purchases of property, plant and equipment of \$18.5 million in 2023 compared to 2022. We also made deposits of \$7.9 million in 2023 included in other long-term assets to secure a license to technologies that can be used to produce high margin downstream products. The increased net purchases of marketable securities of \$13.5 million, offset by a decrease in maturities of marketable securities of \$22.9 million in 2023 as compared to 2022.

The Company had substantial activities related to the development of Origin 1 prior to its completion in fourth quarter 2023, which is the main driver of the variation in cash used in investing activities between the two periods.

Material Cash Requirements from Known Contractual and Other Obligations

Our material cash requirements from known contractual and other obligations as of December 31, 2023, consisted of:

- The operating cost of Origin 1 and project development cost of Origin 2, plus the ongoing operating loss of the Company is expected to be funded through a combination of Company cash and marketable securities in addition to substantial project financing and government incentives. We also expect to secure funding for plant construction under potential collaborations, strategic alliances or marketing, distribution or licensing arrangements or debt financings, which have not yet been secured.
- Operating lease liabilities that are included in our consolidated balance sheets consists of future non-cancelable minimum rental payments under operating leases for our office space, research and development space, and leases of various office equipment, warehouse space, and temporary fencing. Operating lease liabilities of \$0.4 million is short term and the remaining \$4.2 million is related to long-term. For additional information regarding our operating lease liabilities, see Note 17-Leases to the consolidated financial statements in Item 8 of this Annual Report.
- In the near-term, the Company also expects to make payments related to the repayment agreement associated with the notes payable. The repayment in the amount of \$2.7 million is due on September 1, 2024, \$1.9 million is due on September 1, 2025, and \$1.8 million is due on September 1, 2026 (inclusive of accrued but unpaid interest). However, the prepayment could be used to credit against the purchase of products over the term of the Offtake Agreement. For additional information regarding this repayment, see Note 10- Notes Payable to the consolidated financial statements in Item 8 of this Annual Report.
- Additionally, the Company is anticipated to make payment related to the amended repayment agreements associated with the prepayment recorded in the other liabilities, long-term. The repayment amount including both principal and accrued interest of \$2.2 million is due on March 1, 2024, \$1.6 million is due on September 1, 2024, and \$2.1 million is due on March 1, 2025. Unlike the repayment agreement above, this prepayment cannot be used to credit against the purchase of products. For additional information regarding this repayment, see Note 11- Other Liabilities, Long-term to the consolidated financial statements in Item 8 of this Annual Report
- Furthermore, the Company has a prepayment agreement with a counterparty with \$2.5 million due within 30 days of the customer confirming that a sample from Origin 1 meets the customer's specifications. On February 5, 2024, the parties to the prepayment agreement entered into a memorandum of understanding by which they agreed that the counterparty would be released from its obligation to pay the remaining \$2.5 million of the prepayment and that Legacy Origin would refund the first \$2.5 million within a certain period after reporting in its Quarterly Report on Form 10-Q that its cash on hand has crossed a specified threshold. For additional information regarding this repayment, see Note 11- Other Liabilities, Long-term to the consolidated financial statements in Item 8 of this Annual Report.

Critical Accounting Policies and Estimates

Our financial statements have been prepared in accordance with U.S. GAAP. In the preparation of these consolidated financial statements, we are required to use judgment in making estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities as of the date of the financial statements, as well as the reported expenses incurred during the reporting periods. On an ongoing basis, we evaluate our estimates and assumptions. Our actual results may differ from these estimates under different assumptions or conditions.

We consider an accounting judgment, estimate or assumption to be critical when (1) the estimate or assumption is complex in nature or requires a high degree of judgment and (2) the use of different judgments, estimates and assumptions could have a material impact on the consolidated financial statements. Our significant accounting policies are described in Note 2 to our consolidated financial statements included elsewhere in this Annual Report. We have the critical accounting policies and estimates which are described below.

Earnout Liability

The Company has recorded an earnout liability related to future contingent equity shares related to the Business Combination. The Company recorded these instruments as liabilities on the consolidated balance sheets at fair value, with subsequent changes in their respective fair values recognized in earnings at each reporting date. The determination of the fair value involves certain judgments and estimates. These judgments include, but are not limited to, the probability of achievement of the market conditions, expected volatility of the Company's common stock, and the appropriate discount

rate. Therefore, the Company considers this is a critical accounting estimate. For additional information regarding an earnout liability, see Note 12- Earnout Liability to the consolidated financial statements in Item 8 of this Annual Report.

Revenue Recognition

The Company recognizes revenue in accordance with ASC 606, *Revenue from Contracts with Customers* (“ASC 606”). The core principle of ASC 606 requires that an entity recognize revenue to depict the transfer of promised goods or service to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. In determining the appropriate amount of revenue to be recognized as we fulfill our obligations under our product revenue and service agreements, we perform the following steps:

1. Identifying the contract with a customer;
2. Identifying the performance obligations in the contract;
3. Determining the transaction price;
4. Allocating the transaction price to the performance obligations; and
5. Recognizing revenue when, or as, the performance obligations are satisfied.

We account for a contract with a customer when there is approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. Non-cancellable purchase orders received from customers to deliver a specific quantity of product, when combined with our order confirmation, in exchange for future consideration, create enforceable rights and obligations on both parties and constitute a contract with a customer.

Our service agreements are customized, specified, and often include various stages at which transaction prices are agreed to. These service agreements often include multiple performance obligations within each stage. We identify each performance obligation at contract inception and allocate the consideration to each distinct performance obligation based on the stand-alone selling price of each performance obligation. Our services are tailored to each individual customer and the stand-alone selling prices are not directly observable. As our service agreements include customers that are not in similar geographic markets and for different services, therefore the Company uses the expected cost plus margin approach to estimate the stand-alone selling price for each of our performance obligations. We recognize revenue from the service agreements over the period during which the services are performed and recognize the associated costs as they are incurred.

In general, we recognize revenue when, or as, our performance obligations under the terms of a contract with our customer are satisfied. The Company considers this is a critical accounting policy and estimate.

Recent Accounting Pronouncements

See Note 3 to the consolidated financial statements in this Annual Report for more information about recent accounting pronouncements, the timing of their adoption, and our assessment, to the extent we have made one, of their potential impact on our financial condition and results of operations and cash flows.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to a variety of market and other risks, including the effects of changes in interest rates, inflation and foreign currency translation and transaction risks, as well as risks to the availability of funding sources, hazard events and specific asset risks.

Interest Rate Risk

The market interest risk in our financial instruments and our financial positions represents the potential loss arising from adverse changes in interest rates. As of December 31, 2023 and 2022, we had cash and cash equivalents and marketable securities of \$158.3 million and \$323.8 million, respectively, consisting of interest-bearing money market accounts and marketable securities, for which the fair market value would be affected by changes in the general level of U.S. interest rates. However, due to the short-term maturities and the low-risk profile of our investments, an immediate 10% change in the interest rate would not have a material effect on the fair market value of our cash and cash equivalents and marketable securities. As such, management believes that the Company is not exposed to significant interest rate risk.

Foreign Currency Risk

Our functional currency is the U.S. dollar, while our Canadian subsidiaries' functional currency is the Canadian dollar. This can expose us to both currency transaction and translation risk. To date, we have not had material exposure to foreign currency fluctuations and have not hedged such exposure, although we may do so in the future.

Certain marketable debt securities may be denominated in foreign currencies. At December 31, 2023, we had marketable debt securities denominated in U.S. dollar, Australian dollar, and British pound sterling. We pursue our objective of limiting foreign currency exposure by utilizing foreign currency forward contracts to offset foreign exchange risk. Our foreign currency forward contracts are generally short-term in duration. We neither use these foreign currency forward contracts for trading purposes nor do we currently designate these forward contracts as hedging instruments pursuant to Accounting Standards Codification Topic 815, *Derivatives and Hedging*. Accordingly, we record the fair values of these contracts as of the end of our reporting period to our consolidated balance sheets with changes in fair values recorded to our consolidated statements of operations and comprehensive income. Given the short duration of the forward contracts, the amount recorded is not significant. Our ultimate realized gain or loss with respect to foreign currency exposures will generally depend on the size and type of cross-currency transactions that we enter into, the currency exchange rates associated with these exposures and changes in those rates, the net realized gain or loss on our foreign currency forward contracts and other factors.

Inflation Risk

Inflation rates continue to have an effect on worldwide economies. Inflation generally affects us by increasing our cost of labor and may also increase transportation and construction costs due, for example, to higher fuel prices. We believe that inflation has not had a material effect on our audited consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Item 8. Financial Statements

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Origin Materials, Inc.

Opinion on the Financial Statements

We have audited the accompanying Consolidated Balance Sheet of Origin Materials, Inc. and subsidiaries (the "Company") as of December 31, 2023, the related Consolidated Statements of Operations and Comprehensive Income, Stockholders' Equity and Cash Flows, for year ended December 31, 2023, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023, and the results of its operations and its cash flows for the year ended December 31, 2023, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audit included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audit provides a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenues — Service Agreements — Refer to Notes 3 and 4 to the financial statements

Critical Audit Matter Description

The Company recognizes revenue in accordance with ASC 606, *Revenue from Contracts with Customers* ("ASC 606"). The Company generates revenue from product sales and service agreements. For service agreements, transaction prices are agreed to at the stage level and often include more than one performance obligation per stage. The Company identifies each performance obligation at contract inception and allocates the consideration to each distinct performance obligation based on the stand-alone selling price of each performance obligation. The accounting for these agreements involves judgement, particularly as it relates to the process of estimating total costs and profit for the performance obligation. The Company recognizes revenue when, or as, the performance obligations under the terms of a contract with customers are satisfied.

Given the judgments necessary to estimate total costs and profit for each performance obligation used to recognize revenue for service agreements, auditing such estimates required a high degree of auditor judgement and subjectivity and increased extent of effort. Accordingly, we identified the estimation of total costs and profit for each performance obligation used to recognize revenue in service agreements as a critical audit matter.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the estimation of total costs and profit for each performance obligation used to recognize revenue in service agreements included the following, among others:

- We performed the following on the Company's single service agreement for which revenue was recognized for the year ended December 31, 2023:
 - Obtained the executed contract, obtained an understanding of the contract through inquiries with management, and evaluated whether management properly documented the terms of the contract in accordance with ASC 606.
 - Compared the transaction prices allocated to each stage with the executed contract.
 - Evaluated the estimates of total cost and profit for the performance obligation by comparing costs incurred to date to the costs management estimated to be incurred to date.
 - Tested the mathematical accuracy of the Company's calculation of revenue for the allocation of the transaction price to the performance obligations that were satisfied during the year ended December 31, 2023.
 - Inspected completed deliverables for stages which performance obligations were satisfied as of December 31, 2023 and performed corroborating inquiry with the Company's project manager regarding the costs associated with each of these completed performance obligations and forecasted costs for incomplete performance obligations.

/s/ DELOITTE & TOUCHE LLP

Sacramento, California

March 4, 2024

We have served as the Company's auditor since 2023.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Origin Materials, Inc.

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of Origin Materials, Inc. (a Delaware corporation) and subsidiaries (the “Company”) as of December 31, 2022, the related consolidated statements of operations and comprehensive income, stockholders’ equity, and cash flows for year ended December 31, 2022, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and the results of its operations and its cash flows in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

Basis for opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ GRANT THORNTON LLP

We served as the Company's auditor from 2020 to 2023.

San Jose, California
February 23, 2023

ORIGIN MATERIALS, INC.
CONSOLIDATED BALANCE SHEETS

(In thousands, except share and per share data)

	December 31, 2023	December 31, 2022
ASSETS		
Current assets		
Cash and cash equivalents	\$ 75,502	\$ 107,858
Restricted cash	—	490
Marketable securities	82,761	215,464
Accounts receivable and unbilled receivable, net	16,128	—
Other receivables	3,449	4,346
Inventory	912	—
Prepaid expenses and other current assets	8,360	3,341
Total current assets	187,112	331,499
Property, plant, and equipment, net	243,118	154,183
Operating lease right-of-use asset	4,468	2,779
Intangible assets, net	121	160
Deferred tax assets	1,261	—
Other long-term assets	25,754	5,079
Total assets	\$ 461,834	\$ 493,700
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 1,858	\$ 10,384
Accrued expenses	7,689	8,414
Operating lease liabilities, current	367	619
Notes payable, short-term	1,730	—
Other liabilities, current	918	51
Derivative liability	300	344
Total current liabilities	12,862	19,812
Earnout liability	1,783	42,533
Canadian Government Research and Development Program liability	7,348	7,185
Common stock warrants liability	1,341	30,872
Notes payable, long-term	3,459	5,847
Operating lease liabilities	4,207	2,249
Other liabilities, long-term	8,327	8,297
Total liabilities	39,327	116,795
Commitments and contingencies (See Note 18)		
STOCKHOLDERS' EQUITY		
Preferred stock, \$0.0001 par value, 10,000,000 shares authorized; no shares issued and outstanding as of December 31, 2023 and 2022	—	—
Common stock, \$0.0001 par value, 1,000,000,000 shares authorized; 145,706,531 and 143,034,225, issued and outstanding as of December 31, 2023 and 2022, respectively (including 4,500,000 Sponsor Vesting Shares)	15	14
Additional paid-in capital	382,854	371,072
Retained earnings	45,570	21,772
Accumulated other comprehensive loss	(5,932)	(15,953)
Total stockholders' equity	422,507	376,905
Total liabilities and stockholders' equity	\$ 461,834	\$ 493,700

The accompanying notes are an integral part of these consolidated financial statements.

ORIGIN MATERIALS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME

	Year Ended December 31,	
	2023	2022
(In thousands, except share and per share data)		
Revenues:		
Products	\$ 23,896	\$ —
Services	4,909	—
Total revenues	28,805	—
Cost of revenues (exclusive of depreciation and amortization shown separately below)	23,591	—
Operating expenses		
Research and development	21,351	14,141
General and administrative	35,382	24,095
Depreciation and amortization	3,363	711
Total operating expenses	60,096	38,947
Loss from operations	(54,882)	(38,947)
Other income (expenses)		
Interest income	6,303	8,825
Interest expenses	(131)	—
Gain (loss) in fair value of derivatives	69	(443)
Gain in fair value of common stock warrants liability	29,531	21,988
Gain in fair value of earnout liability	40,983	85,437
Other income, net	838	1,709
Total other income, net	77,593	117,516
Income before income tax benefits	22,711	78,569
Income tax benefits	1,087	—
Net income	\$ 23,798	\$ 78,569
Other comprehensive income (loss)		
Unrealized gain (loss) on marketable securities, net of tax	\$ 6,355	\$ (8,014)
Foreign currency translation adjustment, net of tax	3,666	(6,688)
Total other comprehensive income (loss)	10,021	(14,702)
Total comprehensive income	\$ 33,819	\$ 63,867
Net income per share, basic	\$ 0.17	\$ 0.57
Net income per share, diluted	\$ 0.17	\$ 0.55
Weighted-average common shares outstanding, basic	139,718,385	137,563,877
Weighted-average common shares outstanding, diluted	142,658,423	142,146,767

The accompanying notes are an integral part of these consolidated financial statements.

ORIGIN MATERIALS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In Thousands, Except Share Amounts)

	Common Stock		Additional Paid-in Capital	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive loss	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2021	141,301,569	\$ 16	\$ 361,542	\$ (56,797)	\$ (1,251)	\$ 303,510
Common stock issued upon exercise of stock options	1,412,226	—	401	—	—	401
Vested common stock awards	320,430	(2)	—	—	—	(2)
Stock-based compensation	—	—	9,129	—	—	9,129
Net income	—	—	—	78,569	—	78,569
Other comprehensive loss	—	—	—	—	(14,702)	(14,702)
Balance at December 31, 2022	143,034,225	14	371,072	21,772	(15,953)	376,905
Common stock issued upon exercise of stock options	959,143	—	146	—	—	146
Vested common stock awards	1,713,163	1	—	—	—	1
Stock-based compensation	—	—	11,636	—	—	11,636
Net income	—	—	—	23,798	—	23,798
Other comprehensive income	—	—	—	—	10,021	10,021
Balance at December 31, 2023	145,706,531	\$ 15	\$ 382,854	\$ 45,570	\$ (5,932)	\$ 422,507

The accompanying notes are an integral part of these consolidated financial statements.

ORIGIN MATERIALS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)	Year Ended December 31,	
	2023	2022
Cash flows from operating activities		
Net income	\$ 23,798	\$ 78,569
Adjustments to reconcile net income to net cash used in operating activities:		
Depreciation and amortization	3,363	711
Amortization on right-of-use asset	615	582
Stock-based compensation	9,400	7,235
Realized gain on marketable securities	(1,018)	—
Amortization of premium and discount of marketable securities, net	3,750	—
Change in fair value of derivative	(69)	443
Change in fair value of common stock warrants liability	(29,531)	(21,988)
Change in fair value of earnout liability	(40,983)	(85,437)
Deferred tax benefits	(1,246)	—
Changes in operating assets and liabilities:		
Accounts and other receivables	(15,230)	(1,734)
Inventory	(912)	—
Prepaid expenses and other current assets	(4,994)	432
Other long-term assets	(12,761)	(5,017)
Accounts payable	909	26
Accrued expenses	4,985	485
Operating lease liability	(534)	(572)
Other liabilities, current	65	(329)
Other liabilities, long-term	38	502
Net cash used in operating activities	(60,355)	(26,092)
Cash flows from investing activities		
License prepayment within other long-term assets	(7,913)	—
Purchases of property, plant, and equipment	(102,188)	(83,691)
Purchases of marketable securities	(3,626,305)	(3,823,407)
Sales of marketable securities	3,605,216	3,815,859
Maturities of marketable securities	157,422	180,331
Capitalized interest on plant construction	—	(245)
Net cash provided by investing activities	26,232	88,847
Cash flows from financing activities		
Proceeds from Canadian Government Research and Development	—	849
Proceeds from exercise of stock options	146	399
Net cash provided by financing activities	146	1,248
Effects of foreign exchange rate changes on the balance of cash and cash equivalents, and restricted cash held in foreign currencies	1,131	(2,782)
Net (decrease) increase in cash and cash equivalents, and restricted cash	(32,846)	61,221
Cash and cash equivalents, and restricted cash, beginning of the period	108,348	47,127
Cash and cash equivalents, and restricted cash, end of the period	\$ 75,502	\$ 108,348
Supplemental disclosure of cash flow information		
Operating lease right-of-use assets obtained in exchange for lease obligations	\$ 2,308	\$ 1,687
Stock-based compensation capitalized into property, plant, and equipment	\$ 2,236	\$ 1,894
Purchases of fixed assets included in accounts payable and accrued expenses	\$ 1,939	\$ 17,085
Accrued interest capitalized into property, plant, and equipment	\$ 367	\$ —
Cash paid during the period:		
Income taxes payment	\$ 129	\$ —

The accompanying notes are an integral part of these consolidated financial statements.

ORIGIN MATERIALS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Business

Unless the context otherwise requires, references in these notes to “Origin”, “the Company”, “we”, “us” and “our” and any related terms are intended to mean Origin Materials, Inc. and its consolidated subsidiaries.

In June 2021, Artius Acquisition Inc. (“Artius”), a special purpose acquisition company, completed a business combination and merger with Micromidas, Inc., a Delaware corporation (now known as Origin Materials Operating Inc., (“Legacy Origin”)), Pursuant to the terms of the Merger Agreement (a business combination between Artius and Legacy Origin, the “Merger Agreement”) under which Legacy Origin became a wholly-owned subsidiary of Artius (the “Merger”) and Artius changed its name to Origin Materials, Inc. (collectively with its subsidiaries, the “Company”). The Company's mission to help enable the world’s transition to sustainable materials. Our innovative technologies include all-PET caps and closures that bring recycling circularity and enhanced performance to a greater than \$65 billion market, specialty materials, and our patented biomass conversion platform that transforms carbon into sustainable materials for a wide range of end products addressing a ~\$1 trillion market including food and beverage packaging, clothing, textiles, plastics, car parts, carpeting, tires, adhesives, soil amendments and more. The Company’s biomass conversion technology can transform sustainable feedstocks, such as sustainably harvested wood, agricultural waste, wood waste and corrugated cardboard, into materials and products that are currently made from fossil feedstocks, such as petroleum and natural gas.

The Company achieved the mechanical completion of its first manufacturing plant in Ontario, Canada (“Origin 1”), the world’s first commercial chloromethylfurfural (“CMF”) plant, and the plant is currently fully operational. The Company is also currently in the planning phase for the construction of a significantly larger manufacturing plant (“Origin 2”).

2. Summary of Significant Accounting Policies

Basis of Presentation

The Company’s consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”) as determined by the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) and pursuant to the regulations of the U.S. Securities and Exchange Commission (“SEC”).

Use of Estimates

The preparation of the consolidated financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of commitments and contingencies at the date of the financial statements as well as reported amounts of revenues, costs and expenses during the reporting periods. Estimates made by the Company include, but are not limited to, valuation of the earnout liability, carrying amount and useful lives of property and equipment and intangible assets, impairment assessments, probabilities of achievement of performance conditions on performance stock awards. The Company bases these estimates on historical experience and on various other assumptions that it believes are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying amounts of assets and liabilities that are not readily apparent from other sources. Actual results could differ materially from those estimates.

Principles of Consolidation

The consolidated financial statements have been prepared in accordance with U.S. GAAP and applicable rules and regulations of the SEC and include the accounts of the Company and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk are primarily cash, cash equivalents, marketable securities and accounts receivable. The Company maintains its cash, cash equivalents, and marketable securities accounts with financial institutions where, at times, deposits exceed federal insurance limits. Management believes that the Company is not currently exposed to significant credit risk as the Company’s deposits are held at financial institutions that management believes to be of high credit quality. While the Company has not experienced losses of these deposits to date, future disruptions of financial institutions where we bank or have credit arrangements, or disruptions of the financial services industry in general, could adversely affect our ability to access our cash and cash

equivalents. If we are unable to access our cash and cash equivalents as needed, our financial position and ability to operate our business could be adversely affected. For accounts receivable, as of December 31, 2023, our top two customers from product sales, in the aggregate, accounted for approximately 67% of total accounts receivable outstanding balances and accounted for approximately 77% of total revenue for the year ended December 31, 2023.

Cash and Cash Equivalents and Restricted Cash

The Company considers all highly liquid investments with an initial maturity of three months or less at the date of purchase to be cash equivalents. The Company maintains such funds in cash deposits and money market accounts.

Restricted cash consists of cash held in a control account as collateral for the Company's escrow services and standby letter of credit. These restricted cash balances have been excluded from cash and cash equivalents balance in the consolidated balance sheets based on the contractual terms.

The Company entered into an escrow agreement on September 27, 2019 for \$1.3 million, whereby the funds would be used for construction and transportation services in connection with Origin 1. At December 31, 2023 and 2022, the escrow account had a balance of zero and \$0.3 million, respectively. On June 27, 2023, the Company began startup of the Origin 1 facility. Therefore, those funds are no longer restricted and have been released.

The Company had a standby letter of credit, whereby the funds were used for the completion of work, services, and improvements in connection with Origin 1. The standby letter of credit matured and automatically renewed in October of each year. At December 31, 2023 and 2022, the standby letter of credit was zero and \$0.2 million, respectively. On June 27, 2023, the Company began startup of the Origin 1 facility. Therefore, those funds are no longer restricted and have been released.

Cash, cash equivalents, and restricted cash consisted of the following (in thousands):

	December 31, 2023	December 31, 2022
Cash and cash equivalents	\$ 75,502	\$ 107,858
Restricted cash	—	490
Total cash, cash equivalents, and restricted cash	<u>\$ 75,502</u>	<u>\$ 108,348</u>

Marketable Securities

The Company's investment policy requires the Company to purchase investments that are consistent with the classification of available-for-sale securities. The Company does not buy and hold securities principally for the purpose of selling them in the near future. The Company's policy is focused on the preservation of capital, liquidity, and return. The Company considers all of its marketable debt securities as available for use in current operations, including those with maturity dates beyond one year, and therefore classifies these securities within current assets on the consolidated balance sheets. Securities are classified as available for sale and are carried at fair value, with the change in unrealized gains and losses, net of tax, reported as a separate component in the consolidated statements of operations and comprehensive income until realized. Fair value is determined based on quoted market rates when observable or utilizing data points that are observable, such as quoted prices, interest rates and yield curves. Securities with an amortized cost basis in excess of estimated fair value are assessed to determine what amount of the excess, if any, is caused by expected credit losses. Expected credit losses on securities are recognized in other income, net in the consolidated statements of operations and comprehensive income, and any remaining unrealized gains and losses, net of taxes, are included in accumulated other comprehensive loss in the consolidated statements of stockholders' equity. For the purposes of computing realized and unrealized gains and losses, the cost of securities sold is based on the specific-identification method. Amortization of discounts and premiums, net, and interest on securities classified as available for sale are included as a component of interest income within other income (expenses).

The nature of these financial instruments include instruments for which quoted prices are available but traded less frequently, instruments whose fair value has been derived using a model where inputs to the model are directly observable in the market, or can be derived principally from or corroborated by observable market data, and instruments that are fair valued using other financial instruments, the parameters of which can be directly observed. Level 2 financial instruments include agency mortgage-backed securities, corporate fixed income securities infrequently traded, and other securities, which primarily consist of sovereign debt, U.S. government agency securities, loans, and state and municipal securities.

Derivative Financial Instruments

The Company enters into foreign currency derivative contracts with financial institutions to reduce foreign exchange risk related to marketable securities. The Company uses forward currency derivative contracts to minimize the Company's exposure to balances primarily denominated in the British Pound Sterling and Australian Dollar. The Company's foreign currency derivative contracts, which are not designated as hedging instruments, are used to reduce the exchange rate risk associated primarily with marketable securities. The Company's derivative financial instruments program is not designated for trading or speculative purposes. Outstanding foreign currency derivative contracts are recorded at fair value on the consolidated balance sheets.

Foreign currency derivative contracts are marked-to-market at the end of each reporting period with gains and losses recognized in the change in fair value of derivatives within other income (expenses). While the contract or notional amount is often used to express the volume of foreign currency derivative contracts, the amounts potentially subject to credit risk are generally limited to the amounts, if any, by which the counterparties' obligations under the agreements exceed the obligations of the Company to the counterparties.

Fair Value of Financial Instruments

The Company applies the fair value measurement accounting standard whenever other accounting pronouncements require or permit fair value measurements. Fair value is defined in the accounting standard as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy under current accounting guidance prioritizes the inputs to valuation techniques used to measure fair value into three broad levels (Level 1, Level 2, and Level 3).

Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability and reflect the Company's own assumptions about the assumptions that market participants would use in pricing the asset or liability (including assumptions about risk) in a principal market.

The carrying amounts of working capital balances approximate their fair values due to the short maturity of these items. Unless otherwise noted, it is management's opinion that the Company is not exposed to significant interest rate, currency, or credit risks arising from its financial instruments.

The fair values of cash equivalents and the Common Stock Warrants which are publicly traded are level 1 inputs. The fair value of the Common Stock Warrants which are not publicly traded, marketable securities, and foreign currency derivative contracts are level 2 inputs as the Company uses quoted market prices or alternative pricing sources and models utilizing observable market inputs. The earnout liability was estimated using Level 3 inputs.

Accounts Receivable and unbilled services, net

We record accounts receivable at the stated amount of the transactions with our customers, and we do not charge interest. The allowance for credit losses, known as the Current Expected Credit Losses ("CECL") model, is our best estimate of the amount of probable credit losses associated with our accounts receivable. We determine the allowance based on current conditions, and reasonable and supportable forecasts. Past-due balances are reviewed individually for collectability. We charge off account balances against the allowance after we have exhausted all means of collection and we consider the potential for recovery to be remote. Our accounts receivable generally have net 30 to net 90-day payment terms, and we usually receive consideration in accordance with the payment terms of the contract. As of December 31, 2023 and 2022, we do not have any allowance for credit losses. Unbilled receivables arise when the timing of cash collected from customers differs from the timing of revenue recognition for the obligations performed.

	December 31, 2023	December 31, 2022
Accounts receivable, gross	\$ 15,204	\$ —
Allowance for credit loss	—	—
Unbilled receivable	924	—
Accounts receivable, net	<u>\$ 16,128</u>	<u>\$ —</u>

Other Receivables

Other receivables consist of amounts due from foreign governmental entities related to the Canadian harmonized sales tax (“HST”) and goods and services tax (“GST”) for goods and services transacted in Canada, and amounts due from cash collateral held by others for foreign currency derivative contracts.

Inventory

Inventory is stated at the lower of cost or net realizable value. Cost is determined using a weighted-average cost approach, assuming full absorption of direct and indirect manufacturing costs, or based on cost of purchasing from our vendors. If inventory costs exceed expected net realizable value due to obsolescence or lack of demand, valuation adjustments are recorded for the difference between the cost and the expected net realizable value.

Property, Plant, and Equipment

Additions to property, plant, and equipment are recorded at cost and depreciated or amortized using the straight-line method over the estimated economic useful lives of the respective assets. The estimated useful lives of assets are as follows:

Computer equipment and software	3 years
Lab equipment	5 years
Furniture, fixtures, and machinery	5 years
Land improvements and infrastructure	20 years
Manufacturing equipment and pilot plant	25 years
Buildings	40 years

Land is non-amortizing. Computer equipment and software includes an immaterial amount of internal use software. Major additions and improvements are capitalized, while replacements, repairs, and maintenance that do not extend the life of an asset are charged to expenses.

Upon retirement or sale, the cost of assets disposed and the related accumulated depreciation or amortization are removed from the accounts and any resulting gain or loss is charged to income or loss from operations. Costs incurred to acquire, construct or install property, plant, and equipment during the construction stage of a capital project and costs capitalized in conjunction with major improvements that have not yet been placed in service are recorded as construction in progress, and accordingly are not currently being depreciated. The Company capitalizes stock-based compensation expenses and interest cost incurred on funds used to construct property, plant and equipment.

Intangible Assets

Intangible assets are recorded at cost and are amortized using the straight-line method over the estimated useful lives of the respective assets, ranging from 7 to 15 years. The cost of servicing the Company’s patents is expensed as incurred. Upon retirement or sale, the cost of intangible assets is disposed of and the related accumulated amortization is removed from the accounts.

Impairment of Long-Lived Assets

The Company reviews its long-lived assets, including property, equipment, software and intangibles, for impairment whenever events or changes in circumstances indicate that the carrying amounts of the assets may not be fully recoverable. If indicators of impairment exist, management identifies the asset group which includes the potentially impaired long-lived asset, at the lowest level at which there are separate, identifiable cash flows. If the total of the expected undiscounted future net cash flows for the asset group is less than the carrying amount of the asset, a loss is recognized for the difference between the fair value and carrying amount of the asset. For the year ended December 31, 2023 and 2022, no impairment was identified.

Common Stock Warrants Liability

The Company assumed 24,149,960 public warrants (the “Public Warrants”) and 11,326,667 private placement warrants (the “Private Placement Warrants”, and the Public Warrants together with the Private Placement Warrants, the “Common Stock Warrants” or “Warrants”) upon the Merger, all of which were issued in connection with Artius’ initial public offering and entitle each holder to purchase one share of Class A common stock at an exercise price of at \$11.50 per share. As of

December 31, 2023, 24,149,960 Public Warrants and 11,326,667 Private Placement Warrants are outstanding. The Public Warrants are publicly traded and are exercisable for cash unless certain conditions occur, such as the failure to have an effective registration statement related to the shares issuable upon exercise or redemption by the Company under certain conditions, at which time the Public Warrants may be cashless exercised. The Private Placement Warrants are transferable, assignable or salable in certain limited exceptions. The Private Placement Warrants are exercisable for cash or on a cashless basis, at the holder's option, and are non-redeemable so long as they are held by the initial purchasers or their permitted transferees. If the Private Placement Warrants are held by someone other than the initial purchasers or their permitted transferees, the Private Placement Warrants will cease to be Private Placement Warrants, and become Public Warrants and be redeemable by the Company and exercisable by such holders on the same basis as the other Public Warrants. There were no Private Placement Warrants that became Public Warrants as of Dec 31, 2023.

The Company evaluated the Common Stock Warrants under ASC 815-40, *Derivatives and Hedging-Contracts in Entity's Own Equity* ("ASC 815-40"), and concluded they do not meet the criteria to be classified in stockholders' equity. Specifically, the exercise of the Common Stock Warrants may be settled in cash upon the occurrence of a tender offer or exchange that involves 50% or more of our Class A stockholders. Because not all of the voting stockholders need to participate in such tender offer or exchange to trigger the potential cash settlement and the Company does not control the occurrence of such an event, the Company concluded that the Common Stock Warrants do not meet the conditions to be classified in equity. Since the Common Stock Warrants meet the definition of a derivative under ASC 815, the Company recorded these Warrants as liabilities on the consolidated balance sheets at fair value, with subsequent changes in their respective fair values recognized in the gain in fair value of common stock warrant liabilities within the consolidated statements of operations and comprehensive income at each reporting date. The Public Warrants were publicly traded and thus had an observable market price to estimate fair value, and the Private Placement Warrants were effectively valued similar to the Public Warrants, as described in Note 5.

Earnout Liability

The Company has recorded an earnout liability related to future contingent equity shares related to the Merger (Note 12). The Company recorded these instruments as liabilities on the consolidated balance sheets at fair value, with subsequent changes in their respective fair values recognized in earnings at each reporting date.

Leases

We determine if an arrangement is a lease at inception. Where an arrangement is a lease, we determine if it is an operating lease or a finance lease. The Company has leases for office space and equipment, some of which have escalating rentals during the initial lease term and during subsequent optional renewal periods. The Company accounts for its leases under ASC 842, *Leases*. The Company recognizes a right-of-use ("ROU") asset and lease liability for leases based on the net present value of future minimum lease payments. Lease expense is recognized on a straight-line basis over the non-cancelable lease term and renewal periods that are considered reasonably certain to be exercised.

Revenue Recognition

The Company began to recognize revenue in 2023. Our revenues are from product sales and service agreements. The majority of our contracts with customers typically contain multiple products and services. We account for individual products and services separately if they are distinct—that is, if a product or service is separately identifiable from other items in the contract and if a customer can benefit from it on its own or with other resources that are readily available to the customer.

The Company recognizes revenue in accordance with ASC 606, *Revenue from Contracts with Customers* (“ASC 606”). The core principle of ASC 606 requires that an entity recognize revenue to depict the transfer of promised goods or service to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. In determining the appropriate amount of revenue to be recognized as we fulfill our obligations under our product revenue and service agreements, we perform the following steps:

1. Identifying the contract with a customer;
2. Identifying the performance obligations in the contract;
3. Determining the transaction price;
4. Allocating the transaction price to the performance obligations; and
5. Recognizing revenue when, or as, the performance obligations are satisfied.

We account for a contract with a customer when there is approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. Non-cancellable purchase orders received from customers to deliver a specific quantity of product, when combined with our order confirmation, in exchange for future consideration, create enforceable rights and obligations on both parties and constitute a contract with a customer.

Our service agreements are customized, specified, and often include various stages at which transaction prices are agreed to. These service agreements often include multiple performance obligations within each stage. We identify each performance obligation at contract inception and allocate the consideration to each distinct performance obligation based on the stand-alone selling price of each performance obligation. Our services are tailored to each individual customer and the stand-alone selling prices are not directly observable. As our service agreements include customers that are not in similar geographic markets and for different services, therefore the Company uses the expected cost plus margin approach to estimate the stand-alone selling price for each of our performance obligations. We recognize revenue from the service agreements over the period during which the services are performed and recognize the associated costs as they are incurred.

In general, we recognize revenue when, or as, our performance obligations under the terms of a contract with our customer are satisfied. For product sales, this happens when we transfer control of our products and risk of loss to the customer or when title passes upon shipment. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring our products. Taxes collected from customers and remitted to governmental authorities are excluded from revenues. The Company recognizes its revenue from direct product sales which is recognized at a point in time when the performance obligation is satisfied upon delivery of the product.

For service agreements, the timing of satisfying performance obligations may differ from the timing of the invoicing of customers and the receipt of customer payments. The Company records a receivable prior to payment if there is an unconditional right to payment. Alternatively, when payment precedes the provision of the related services, the Company records contract liability (deferred income) until the performance obligations are satisfied.

Revenue is recorded in an amount that reflects that consideration we expect to be entitled to in exchange for those goods or services. We have elected to treat shipping and handling activities as fulfillment costs.

Cost of revenues

Cost of revenues for product sales consists primarily of cost associated with the purchase of finished goods. Cost of revenues for service agreements is based on the actual cost incurred, which mainly consists of the direct cost from vendors and overhead costs such as payroll and benefit related to our employees who provide the services to customers.

Research and Development Cost

Costs related to research and development are expensed as incurred.

Stock-Based Compensation

The Company has issued common stock awards under three equity incentive plans. Origin measures stock options and other stock-based awards granted to employees, directors and other service providers based on their fair value on the date of grant and recognizes compensation expenses of those awards over the requisite service period, which is generally the vesting period of the respective award. In addition, the Company capitalizes stock-based compensation related to employees whose costs are necessary to bring the asset to its intended use. For awards with performance conditions, compensation is recorded once there is sufficient objective evidence the performance conditions are considered probable of

being met. Origin applies the straight-line method of expense recognition to all awards with only service-based vesting conditions. Origin estimates the fair value of each stock option grant on the date of grant using the Black-Scholes option-pricing model and the grant date closing stock price for RSU awards and performance awards. The Black-Scholes option-pricing model requires the use of highly subjective assumptions including:

- *Expected term* – The expected term of the options is based on the simplified method, which takes into consideration the grant’s contractual life and vesting period and assumes that all options will be exercised between the vesting date and the contractual term of the option which averages an award’s vesting term and its contractual term.
- *Expected volatility* – The Company uses the trading history of various companies in its industry sector in determining an estimated volatility factor.
- *Expected dividend* – The Company has not declared common stock dividends and does not anticipate declaring any common stock dividends in the foreseeable future.
- *Forfeiture* – The Company estimates forfeitures based on historical activity and considers voluntary and involuntary termination behavior as well as analysis of actual historical option forfeitures, netting the estimated expense by the derived forfeiture rate.
- *Risk-free interest rate* – The Company bases the risk-free interest rate on the implied yield currently available on U.S. Treasury zero-coupon issues with the same or substantially equivalent remaining term.

Workforce Reduction Costs

In November 2023, we announced a plan for a workforce reduction of approximately 30% of our total workforce to realign and optimize our workforce requirements in alignment with our refined corporate strategy. The Company aims to focus on cash conservation and affected an organizational realignment to reflect the deferral of research programs with longer-term economic impacts and the acceleration of higher margin revenue opportunities. Workforce reduction costs primarily consisted of severance and benefits costs associated with the workforce reduction in November 2023 (see Note 15). As of December 31, 2023, we do not expect to record any significant future charges related to the workforce reduction plan.

Income Taxes

Deferred income taxes are determined using the asset and liability method. Under this method, deferred income tax assets and liabilities are determined based on differences between the financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when the differences are expected to reverse. A valuation allowance is recorded when the expected recognition of a deferred income tax asset is considered to be unlikely.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the tax authorities, based on the technical merits of the position. The tax benefit is measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. The Company recognizes interest and penalties related to income tax matters as a component of income tax expense.

Functional Currency Translation

The functional currency of the Company’s wholly-owned Canadian subsidiaries is the Canadian dollar, whereby their assets and liabilities are translated at period-end exchange rates except for non-monetary capital transactions and balances, which are translated at historical rates. All income and expense amounts of the Company are translated at average exchange rates for the respective period. Translation gains and losses are not included in determining net income but are accumulated in a separate component of stockholders’ equity. Foreign currency transaction gains and losses are included in the determination of net income in the period in which they occur. These amounts are included in other income, net, of the consolidated statements of operations and comprehensive income.

Comprehensive Income (Loss)

The Company’s comprehensive income (loss) consists of net income (loss) and other comprehensive income (loss). Foreign currency translation gains or losses and unrealized gains or losses on available-for-sale marketable debt securities are included in the Company’s other comprehensive income (loss).

Basic and Diluted Net Income Per Share

Basic net income per common share is calculated by dividing the net income attributable to common stockholders by the weighted-average number of common shares outstanding during the period, without consideration of potentially dilutive securities. Diluted net income per share is computed by dividing the net income attributable to common stockholders by the weighted-average number of common stock and potentially dilutive securities outstanding for the period. For the purposes of the diluted net income per share calculation, common stock options, RSU awards, performance stock awards, warrants, earnout shares, and Sponsor Vesting Shares (as defined in Note 12) are considered to be potentially dilutive securities. For the periods presented that the Company has reported a net loss, diluted net loss per common share is the same as basic net loss per common share for those periods.

Reclassifications

Certain amounts on the consolidated balance sheets as of December 31, 2022 have been condensed to conform with the current presentation for the year ended December 31, 2023.

Segment Reporting

The Company operates in a single segment. Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision maker (“CODM”) in making decisions regarding resource allocation and assessing performance. The Company has determined that its Co-Chief Executive Officers are the CODM. As of and for the year ending December 31, 2023, the Company’s CODM has made such decisions and assessed performance at the Company level.

As of December 31, 2023 and 2022, the Company had \$206.1 million and \$157.2 million, respectively, of assets located outside of the United States.

3. Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In March 2022, the FASB issued ASU 2022-01, *Derivatives and Hedging (“Topic 815”)*. This update clarifies the guidance in Topic 815 on fair value hedge accounting of interest rate risk for portfolios and financial assets. Among other things, the amended guidance established the “last-of-layer” method for making the fair value hedge accounting for these portfolios more accessible and renamed that method the “portfolio layer” method. ASU 2022-01 is effective January 1, 2023. The Company adopted the new standard as of January 1, 2023. The adoption of the standard had no material impact on the Company’s financial results.

Recently Issued Accounting Pronouncements Not Yet Adopted

In November 2023, the FASB issued ASU 2023-07, *Segment Reporting (“Topic 280”) - Improvements to Reportable Segment Disclosures*, which updates disclosures about a public entity’s reportable segments, including more detailed information about a reportable segment’s expenses. The amendments in this update require that we disclose (i) on an annual and interim basis, significant segment expenses that are regularly provided to the chief operating decision maker (“CODM”) and included within each reported measure of segment profit or loss (collectively referred to as the “significant expense principle”), (ii) on an annual and interim basis, an amount for other segment items by reportable segment and a description of its composition. The other segment items category is the difference between segment revenue less the segment expenses disclosed under the significant expense principle and each reported measure of segment profit or loss, (iii) annual disclosures about a reportable segment’s profit or loss and assets currently required by Topic 280 in interim periods, (iv) clarify that if the CODM uses more than one measure of a segment’s profit or loss in assessing segment performance and deciding how to allocate resources, we may report one or more of those additional measures of segment profit. However, at least one of the reported segment profit or loss measures (or the single reported measure, if only one is disclosed) should be the measure that is most consistent with the measurement principles used in measuring the corresponding amounts in the public entity’s consolidated financial statements, (v) the title and position of the CODM and an explanation of how the CODM uses the reported measure(s) of segment profit or loss in assessing segment performance and deciding how to allocate resources, and (vi) requires that a public entity that has a single reportable segment provide all the disclosures required by the amendments in this Update and all existing segment disclosures in Topic 280. This guidance is required to be applied retrospectively to all prior periods presented in the financial statements. This guidance is effective for the Company for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. Early adoption is permitted. The Company does not expect that the adoption of this guidance will have a material impact on its consolidated financial statements, other than additional disclosures in our notes to the consolidated financial statements.

In December 2023, the FASB issued ASU 2023-09, *Income Taxes (“Topic 740”) - Improvements to Income Tax Disclosures*, to provide information to better assess how an entity’s operations and related tax risks and tax planning and operational opportunities affect its tax rate and prospects for future cash flows. The amendments in this update require that on an annual basis we (i) disclose specific categories in the rate reconciliation, (ii) provide additional information for reconciling items that meet a quantitative threshold (if the effect of those reconciling items is equal to or greater than 5 percent of the amount computed by multiplying pretax income [or loss] by the applicable statutory income tax rate), (iii) disclose additional information about income taxes paid and expensed disaggregated by federal, state, and foreign taxes, and (iv) disclose income (loss) from continuing operations before income tax expense disaggregated between domestic and foreign. The guidance should be applied on a prospective basis however a retrospective application is permitted. The guidance is effective for the Company for annual periods beginning after December 15, 2024. Early adoption is permitted for annual financial statements that have not yet been issued or made available for issuance. The Company does not expect that the adoption of this guidance will have a material impact on its consolidated financial statements, other than additional disclosures in our notes to the consolidated financial statements.

The Company has determined that all other recently issued accounting pronouncements will not have a material impact on the Company’s consolidated financial statements or do not apply to its operations.

4. Revenue

The Company began to recognize revenue during the year ended December 31, 2023. We recognize revenue when, or as, our performance obligations under the terms of a contract with our customer are satisfied. We generally procure, will produce, and sell product to be utilized in the manufacturing of finished products, for which we recognize revenue upon shipment. Our service contracts generally pay us at the commencement of the agreement and then at additional intervals as outlined in each contract. We recognize contract liabilities for such payments and then recognize revenue as we satisfy the related performance obligations. To the extent collectible revenue recognized under this method exceeds the consideration received, we recognize contract assets for such unbilled consideration. We recognize revenue from the service agreements over the period during which the services are performed.

The Company did not receive payment before the provision of services during the year ended December 31, 2023 and 2022. Therefore, deferred income is zero as of December 31, 2023 and 2022.

5. Fair Value Measurement

The Company's financial assets and liabilities subject to fair value measurements on a recurring basis and the level of inputs used for such measurements were as follows:

(in thousands)	Fair Value as of December 31, 2023			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash and cash equivalents	\$ 75,502	\$ —	\$ —	\$ 75,502
Marketable securities	—	82,761	—	82,761
Total fair value	\$ 75,502	\$ 82,761	\$ —	\$ 158,263
Liabilities:				
Common stock warrants (Public)	\$ 913	\$ —	\$ —	\$ 913
Common stock warrants (Private Placement)	—	428	—	428
Earnout liability	—	—	1,783	1,783
Derivative liability	—	300	—	300
Total fair value	\$ 913	\$ 728	\$ 1,783	\$ 3,424

(in thousands)	Fair Value as of December 31, 2022			
	Level 1	Level 2	Level 3	Total
Assets:				
Cash, cash equivalents and restricted cash	\$ 108,348	\$ —	\$ —	\$ 108,348
Marketable securities	—	215,464	—	215,464
Total fair value	\$ 108,348	\$ 215,464	\$ —	\$ 323,812
Liabilities:				
Common stock warrants (Public)	\$ 21,015	\$ —	\$ —	\$ 21,015
Common stock warrants (Private Placement)	—	9,856	—	9,856
Earnout liability	—	—	42,533	42,533
Derivative liability	—	344	—	344
Total fair value	\$ 21,015	\$ 10,200	\$ 42,533	\$ 73,748

The Company performs routine procedures such as comparing prices obtained from independent sources to ensure that appropriate fair values are recorded. The cash, cash equivalents and public common stock warrants are categorized as Level 1 instruments as the fair value was determined based on the unadjusted quoted prices are available in active markets for identical assets or liabilities as of the reporting date. The marketable securities and derivative liability are categorized as Level 2 instruments as the estimated fair value was determined based on the estimated or actual bids and offers of the marketable securities in an over-the-counter market on the last business day of the year. The common stock warrants are classified within Level 1 or Level 2 because the transfer of Private Placement Warrants to anyone outside of certain permitted transferees of Artius Acquisition Partners LLC (the "Sponsor") would result in the Private Placement Warrants having substantially the same terms as the Public Warrants, the Company determined that the fair value of each Private Placement Warrant is consistent with that of a Public Warrant. Accordingly, the Private Placement Warrants are classified as Level 2 financial instruments.

The value of the earnout liability is classified as Level 3 measurements under the fair value hierarchy, as these liabilities have been valued based on significant inputs not observable in the market (see Note 12). A gain of \$41.0 million and \$85.4 million during the year ended December 31, 2023 and 2022, respectively, was recorded on the consolidated statements of operations and comprehensive income in the gain in fair value of earnout liability.

The following table summarized the activities for the earnout liability:

	December 31, 2023	December 31, 2022
Balance at beginning of period	\$ 42,533	\$ 127,757
Changes in fair value of earnout liability	(40,983)	(85,437)
Other	233	213
Balance at end of period	<u>\$ 1,783</u>	<u>\$ 42,533</u>

As of December 31, 2023 and 2022, the carrying values of accounts receivable, accounts payable, accrued liabilities and deferred income approximate their respective fair values due to their short-term nature. We have determined the fair value of notes payable approximates the carrying value due to the standard terms of the arrangement including but not limited to the amount borrowed, the term, and the interest rate.

Marketable Securities

The Company's marketable securities that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy. Amortized cost net of unrealized gain (loss) is equal to fair value. The following table summarized the marketable securities by major security type as follows:

	As of December 31, 2023			
<u>(in thousands)</u>	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Corporate bonds	\$ 21,869	\$ 26	\$ (847)	\$ 21,048
Asset-backed securities	52,199	26	(2,289)	49,936
U.S. government and agency securities	11,706	—	(270)	11,436
Foreign government and agency securities	372	—	(31)	341
Total marketable securities	<u>\$ 86,146</u>	<u>\$ 52</u>	<u>\$ (3,437)</u>	<u>\$ 82,761</u>

	As of December 31, 2022			
<u>(in thousands)</u>	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Commercial paper	\$ 17,568	\$ 38	\$ —	\$ 17,606
Corporate bonds	115,134	—	(4,923)	110,211
Asset-backed securities	70,825	8	(3,885)	66,948
U.S. government and agency securities	19,308	—	(917)	18,391
Foreign government and agency securities	375	—	(37)	338
Municipal/provincial bonds and other	2,000	—	(30)	1,970
Total marketable securities	<u>\$ 225,210</u>	<u>\$ 46</u>	<u>\$ (9,792)</u>	<u>\$ 215,464</u>

The realized gains and losses are included in other income, net in the consolidated statements of operations and comprehensive income.

We sold marketable securities for proceeds of \$3,605.2 million and \$3,815.9 million during the year ended December 31, 2023 and 2022, respectively. As a result of those sales, we realized a gain of \$1.0 million and a loss of \$1.0 million during the year ended December 31, 2023 and 2022, respectively. We regularly review our available-for-sale marketable securities in an unrealized loss position and evaluate the current expected credit loss by considering factors such as historical experience, market data, issuer-specific factors, and current economic conditions. The aggregate fair value of the marketable securities in unrealized loss position was \$73.2 million and \$193.5 million as of December 31, 2023 and 2022, respectively. The unrealized losses were attributable to changes in interest rates that impacted the value of the investments, and not related to increased credit risk. Accordingly, we have not recorded an allowance for credit losses associated with these investments.

The contractual maturities of the investments classified as marketable securities are as follows:

As of December 31, 2023				
<u>(in thousands)</u>	Mature within one year	Mature after one year through two years	Mature over two years	Fair Value
Corporate bonds	\$ 20,756	\$ 292	\$ —	\$ 21,048
Asset-backed securities	238	1,806	47,892	49,936
U.S. government and agency securities	8,929	—	2,507	11,436
Foreign government and agency securities	341	—	—	341
Total marketable securities	<u>\$ 30,264</u>	<u>\$ 2,098</u>	<u>\$ 50,399</u>	<u>\$ 82,761</u>

As of December 31, 2022				
<u>(in thousands)</u>	Mature within one year	Mature after one year through two years	Mature over two years	Fair Value
Commercial paper	\$ 17,606	\$ —	\$ —	\$ 17,606
Corporate bonds	74,797	35,414	—	110,211
Asset-backed securities	1,907	4,833	60,207	66,947
U.S. government and agency securities	7,719	7,480	3,192	18,391
Foreign government and agency securities	—	338	—	338
Municipal/provincial bonds and other	1,971	—	—	1,971
Total marketable securities	<u>\$ 104,000</u>	<u>\$ 48,065</u>	<u>\$ 63,399</u>	<u>\$ 215,464</u>

Derivative Asset and Liabilities

The Company entered into foreign currency derivative contracts with financial institutions to reduce foreign exchange risk related to certain marketable securities denominated in foreign currency. Foreign currency derivative contracts are marked-to-market at the end of each reporting period with gains and losses recognized as other income (expenses). During the year ended December 31, 2023 and 2022, the Company recognized a net gain of \$0.1 million and a net loss of \$0.4 million, respectively, on the fair value adjustment of the foreign currency derivative contracts. The notional amount of foreign currency derivative contracts as of December 31, 2023 and 2022 was \$14.7 million and \$21.2 million, respectively.

6. Property, Plant and Equipment

Property, plant, and equipment consisted of the following:

<u>(in thousands)</u>	Estimated useful lives	December 31, 2023	December 31, 2022
Land		\$ 11,356	\$ 11,358
Land improvements and infrastructure	20 years	62,930	—
Manufacturing equipment and pilot plant	25 years	116,754	4,599
Computer equipment and software	3 years	1,629	598
Lab equipment	5 years	3,468	2,526
Furniture, fixtures, and machinery	5 years	1,094	948
Total		<u>197,231</u>	<u>20,029</u>
Less accumulated depreciation and amortization		(8,136)	(4,693)
Construction in process		54,023	138,847
Total property, plant, and equipment, net		<u>\$ 243,118</u>	<u>\$ 154,183</u>

For the year ended December 31, 2023 and 2022, depreciation and amortization expense totaled \$3.3 million and \$0.7 million, respectively.

During the year ended December 31, 2023 and 2022, the Company capitalized \$1.5 million and \$1.1 million, respectively, of interest cost into property, plant and equipment related to Origin 1. Interest capitalization ceased during the fourth quarter of the current year as Origin 1 was completed. During the year ended December 31, 2023 and 2022, the Company capitalized into property, plant and equipment, \$2.3 million and \$1.9 million, respectively, of stock-based compensation related to employees whose costs were necessarily incurred to bring the asset to its intended use. The stock-based compensation expense in 2023 includes a portion of the expense associated with the accelerated vesting of certain equity awards as part of the workforce reduction affected in November 2023.

7. Intangible Assets

Intangible assets consisted of the following:

(in thousands)	December 31, 2023	December 31, 2022
Patents	\$ 413	\$ 404
Less accumulated amortization	(292)	(244)
Total intangible assets	<u>\$ 121</u>	<u>\$ 160</u>

The weighted average remaining useful life of the patents was 3.41 years. For the year ended December 31, 2023 and 2022, amortization expense was immaterial and annual amortization expense over the remaining useful life is not expected to be material.

8. Consortium Agreement

In December 2016, the Company entered into a consortium agreement with two Legacy Origin Series B preferred stock investors to collaborate on development of a process to commercialize bio-based, decarbonizing materials for application on an industrial scale at a competitive price. Under the consortium agreement, the Company received \$0.5 million. The agreement expires once performance of the research and development program has been completed.

In August 2018, the agreement was amended, whereby a Legacy Origin Series C preferred stock investor (the “Legacy Origin Series C Investor”, and collectively with the two Legacy Origin Series B investors, the “Legacy Origin Investors”) was added to the agreement and committed to invest \$1.5 million of research and development in the consortium. As of December 31, 2023, the Legacy Origin Series C Investor had not invested any funds in the consortium.

In 2020, an additional counterparty was added to the consortium agreement. During the year ended December 31, 2023 and 2022, the Company did not receive any funds under the consortium agreement.

9. Inventory

Inventory balances consist of the following:

(in thousands)	December 31, 2023	December 31, 2022
Finished goods	\$ 24	\$ —
Raw materials	888	—
Total	<u>\$ 912</u>	<u>\$ —</u>

10. Notes Payable

The Company maintains eight separate offtake supply agreements (the “Offtake Agreements”). Two of the eight Offtake Agreements are with the same customer and pertain to supply of product from Origin 1 and Origin 2, respectively.

Legacy Origin received a \$5.0 million prepayment from a customer for product from Origin 1 pursuant to one of these Offtake Agreements, which Legacy Origin entered into in November 2016. The prepayment was to be credited against the purchase of products over the term of the Offtake Agreement. The prepayment was secured by a promissory note (the “Promissory Note”) to be repaid in cash in the event that the prepayment could not be credited against the purchase of product, for example, if Origin 1 was never constructed. The Promissory Note was collateralized substantially by Origin 1 and other assets of Origin Materials Canada Pioneer Limited. In May 2019, Legacy Origin and the customer amended the Offtake Agreement and Promissory Note. The amendment added accrued interest of \$0.2 million to the principal balance of the prepayment and provided for the prepayment amount to be repaid in three annual installments rather than being applied against the purchase of product from Origin 1. On August 1, 2022, the Company and the customer further amended and restated the Promissory Note with an aggregate principal amount of \$5.2 million, which is the sum of the original principal with accrued interest prior to the amendment. As a result of the amendment, the repayment dates were revised and to allow the customer to offset amounts owed for the purchase of product from the Company’s Origin 1 facility against amounts due under the Promissory Note. The repayment in the amount of \$2.7 million is due on September 1, 2024, \$1.9 million is due on September 1, 2025, and \$1.8 million is due on September 1, 2026 (inclusive of accrued but unpaid interest of 3.5% per annum). At December 31, 2023 the total note principal outstanding was \$5.2 million of which \$3.5 million was included in notes payable, long-term, \$1.7 million notes payable, short-term, and \$0.8 million unpaid accrued interest recorded in other liabilities, current. At December 31, 2022, the note principal balance was \$5.2 million with outstanding accrued interest of \$0.6 million was included in notes payable, long-term. In addition, the amendment reflected the customer’s exercise of its option to enter into a new Offtake Agreement to buy a specified annual amount of product from Origin 2 for an initial term of up to 10 years.

11. Other Liabilities, Long-term

In September 2019, Legacy Origin entered into a \$5.0 million prepayment agreement with a counterparty for the purchase of products from Origin 1. The prepayment is to be made in two equal installments: the first \$2.5 million was paid in October 2019 and the remaining \$2.5 million is due within 30 days of the customer confirming that a sample from Origin 1 meets the customer’s specifications. The Company and customer agreed to work in good faith to execute an Offtake Agreement, the agreed terms of which are set forth in the prepayment agreement, whereby 100% of the prepayment will be applied against future purchases. The prepayment agreement provides the customer a capacity reservation of up to a specified annual volume of product from Origin 1 for a term of ten years, pursuant to the terms of an Offtake Agreement. At December 31, 2023 and 2022, the total amount outstanding on this agreement was \$2.5 million. On February 5, 2024, the parties entered into a memorandum of understanding by which they agreed that the counterparty would be released from its obligation to pay the remaining \$2.5 million of the prepayment and that Legacy Origin would refund the first \$2.5 million within a certain period after reporting in its Quarterly Report on Form 10-Q that its cash on hand has crossed a specified threshold.

Legacy Origin received a \$5.0 million prepayment from a customer for product from Origin 1 pursuant to an Offtake Agreement entered into in November 2016. The agreement was amended in 2019 and added the accrued interest of \$0.1 million to the principal balance. As a result, the aggregate principal amount became \$5.1 million. The prepayment was to be credited against the purchase of products from Origin 1 over the term of the Offtake Agreement, specifically, by applying a credit to product purchases each month over the first five years of operation of Origin 1 up to \$7.5 million, which is equal to 150% of the prepayment amount. If product purchases were not sufficient to recover the advances, the application of the credit to purchases as payment of the advances would continue until fully repaid. The prepayment is secured by an agreement that was to be repaid in cash in the event the prepayment cannot be credited against the purchase of product, for example, if Origin 1 were never constructed. The agreement is collateralized substantially by Origin 1 and other assets of Origin Materials Canada Pioneer Limited. If repaid in cash, the agreement bears an annual interest rate of the three-month Secured Overnight Financing Rate (“SOFR”) plus 0.25% (5.61% at December 31, 2023) and matures five years from the commercial operation date of Origin 1, which is defined by the plant’s actual production of a certain volume of product as well as its capacity to produce a certain annual volume of product. In February 2024, Legacy Origin and the customer amended the agreement to provide for repayment in three installments consisting of approximately \$2.2 million on March 1, 2024, \$1.6 million on September 1, 2024, and \$2.1 million on March 1, 2025 instead of applying a credit to product purchases under the Offtake Agreement. At December 31, 2023 and 2022, the total amount outstanding was \$5.1 million and accrued interest outstanding was \$0.6 million and \$0.3 million, respectively.

12. Earnout Liability

As additional consideration for the Merger, within ten business days after the occurrence of a “Triggering Event,” as defined below, the Company shall issue or cause to be issued to each Legacy Origin stockholder a certain number of shares of the Company Class A Common Stock. The number of such shares is equal to the product of (i) the number of shares of Company Common Stock, Company Series A Preferred Stock, Company Series B Preferred Stock, Company Series C Preferred Stock, and the net number of shares of Company Capital Stock that would be issuable in respect of “Vested Company Options” in the event such options were exercised (on a net exercise basis with respect to only the applicable exercise price, immediately prior to the “Closing” and settled in the applicable number of shares of Company Common Stock, rounded down to the nearest whole share) held by such Legacy Origin stockholder as of immediately prior to the “Effective Time”; and (ii) the “Earnout Exchange Ratio” (such issued shares of Artius Class A Common Stock, collectively, the “Earnout Shares”), where “Vested Company Options,” “Closing,” “Effective Time,” and “Earnout Exchange Ratio” have the meanings set forth in the Merger Agreement. The Company cannot be required to issue more than 25,000,000 Earnout Shares in the aggregate. A Triggering Event is defined as the following:

- (a) the volume weighted average price of Common Stock (“VWAP”) equaling or exceeding \$15.00 for ten consecutive trading days during the three year period following the Closing Date;
- (b) the VWAP equaling or exceeding \$20.00 for ten consecutive trading days during the four year period following the Closing Date; or
- (c) the VWAP equaling or exceeding \$25.00 for ten consecutive trading days during the five year period following the Closing Date.

A Sponsor Letter Agreement was delivered in connection with the Merger such that 4.5 million of the shares held by Sponsor (“Sponsor Vesting Shares”) shall be subject to forfeiture based on the same vesting requirements as the Earnout Shares. These shares shall not be transferred prior to the date in which they vest. Dividends and other distributions with respect to Sponsor Vesting Shares shall be set aside by the Company and shall be paid to the Sponsor upon the vesting of such Sponsor Vesting Shares.

The Company evaluated the earnout liability under ASC 815-40, *Derivatives and Hedging-Contracts in Entity’s Own Equity (“ASC 815-40”)*, and concluded they do not meet the criteria to be classified in stockholders’ equity. Specifically, there are contingent exercise provisions and settlement provisions that exist. Holders may receive differing amounts of shares depending on the company’s stock price or the price paid in a change of control. All remaining shares would be issuable (or the forfeiture provisions would lapse) upon any change of control involving the Company and all remaining shares would be issuable (or the forfeiture provisions would lapse) upon a bankruptcy or insolvency of the company. This means that settlement is not solely impacted by the share price of the Company (that is, the share price observed in or implied by a qualifying change-in-control event), but also by the occurrence of a qualifying change-in-control event. This causes the arrangement to not be indexed to the Company’s own shares and liability classification is appropriate. The Company records these instruments as liabilities on the consolidated balance sheets at fair value, with subsequent changes in their respective fair values recognized in earnings at each reporting date. The earnout liability was fair valued using a Monte Carlo open-ended model. The inputs used for the model were a dividend yield of 0% and 0%, volatility of 108% and 70%, and interest rate of 4.04% and 4.08% at December 31, 2023 and 2022, respectively. At December 31, 2023 and 2022 the balance of the earnout liability was \$1.8 million and \$42.5 million, respectively. A gain of \$41.0 million and \$85.4 million for the year ended December 31, 2023 and 2022, respectively, was recorded on the consolidated statements of operations and comprehensive income in the change in the fair value of earnout liability.

13. Canadian Government Research and Development Program Liability

In April 2019, the Company entered into a contribution agreement related to the research and development and construction associated with the operation of Origin 1 in which the Company will participate in a Canadian government research and development program (the “R&D Agreement”). Pursuant to the R&D Agreement, the Company will receive funding for eligible expenditures incurred through March 31, 2023 up to the lesser of approximately 18.48% of eligible costs and \$23.0 million (in Canadian dollars).

The funding will be repaid over 15 years after completion of Origin 1, commencing no sooner than the third fiscal year of consecutive revenues from a commercial plant, but no later than March 2028. The maximum amount to be repaid by the Company under the R&D Agreement is 1.25 times the actual funding received, subject to the following repayment ceiling formula. Repayment of the funding will be reduced by 50% if the Company begins construction before December 31, 2024 of one or more commercial plants that operate in Canada, with costs exceeding \$500.0 million (in Canadian dollars), and the plants being constructed and operational within 30 months of the final investment decision, as defined in the R&D Agreement. Once begun, repayments will be paid annually by April of each year through March 31, 2037. Payments will be determined by a formula of the funded amount based on the fiscal year gross business revenue, as defined in the R&D Agreement. At December 31, 2023 and 2022, the Company recorded a liability for the amount received of \$7.3 million and \$7.2 million, respectively, on the consolidated balance sheets in Canadian government research and development program liability.

14. Common Stock Warrants

As of December 31, 2023 and 2022, there are 35,476,627 warrants outstanding.

As part of Artius's initial public offering, 24,149,960 Public Warrants were sold. The Public Warrants entitle the holder thereof to purchase one share of Common Stock at a price of \$11.50 per share, subject to adjustments. The Public Warrants may be exercised only for a whole number of shares of Common Stock. No fractional shares will be issued upon exercise of the Public Warrants. The Public Warrants will expire on June 25, 2026 at 5:00p.m., New York City time, or earlier upon redemption or liquidation. The Public Warrants are listed on the Nasdaq under the symbol "ORGNW."

The Company may redeem the Public Warrants when exercisable, in whole and not in part, at a price of \$0.01 per warrant, so long as the Company provides not less than 30 days' prior written notice of redemption to each warrant holder, and if, and only if, the reported last sale price of the Common Stock equals or exceeds \$18.00 per share for any 20 trading days within a 30-trading day period ending on the third trading day prior to the date the Company sends the notice of redemption to the warrant holders.

Simultaneously with Artius's initial public offering, Artius consummated a private placement of 11,326,667 Private Placement Warrants with the Sponsor. The Private Placement Warrant is exercisable for one share of Class A Common Stock at a price of \$11.50 per share, subject to adjustment. The Private Placement Warrants are identical to the Public Warrants, except that: (1) the Private Placement Warrants and the shares of Class A Common Stock issuable upon exercise of the Private Placement Warrants are not transferable, assignable or salable until the earliest to occur of: (i) 365 days after the date of the Closing; (ii) the first day after the date on which the closing price of the Public Shares (or any successor securities thereto) equals or exceeds \$12.00 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations and the like) for any 20 trading days within any 30-trading day period commencing at least 150 days after the date of the Closing; or (iii) the date on which Artius completes a liquidation, merger, capital stock exchange, reorganization or other similar transaction that results in all of Artius's Public Shareholders having the right to exchange their Public Shares (or any successor securities thereto) for cash, securities or other property, subject to certain limited exceptions, (2) the Private Placement Warrants will be exercisable on a cashless basis and be non-redeemable, except if the reference value equals or exceeds \$10.00 and is less than \$18.00 (as described above), so long as they are held by the initial purchasers or their permitted transferees, and (3) the Private Placement Warrants and the Class A ordinary shares issuable upon exercise of the Private Placement Warrants will be entitled to registration rights. If the Private Placement Warrants are held by someone other than the initial purchasers or their permitted transferees, the Private Placement Warrants will be redeemable under all redemption scenarios by the Company and exercisable by such holders on the same basis as the Public Warrants.

The Company concluded the Public Warrants and Private Placement Warrants, or Common Stock Warrants, meet the definition of a derivative under ASC 815 and are recorded as liabilities. Upon consummation of the Merger, the fair value of the Common Stock Warrants was recorded on the consolidated balance sheets. The fair value of the Common Stock Warrants was remeasured on the December 31, 2023 and 2022 consolidated balance sheets at \$1.3 million and \$30.9 million, respectively, and a gain of \$29.5 million and \$22.0 million, respectively, was recorded on the consolidated statements of operations and comprehensive income.

15. Stockholders' Equity

As of December 31, 2023 and 2022, 1,010,000,000 shares, \$0.0001 par value per share are authorized, of which, 1,000,000,000 shares are designated as Common Stock and 10,000,000 shares are designated as Preferred Stock.

Common Stock

Holders of the Common Stock are entitled to dividends when, as, and if, declared by the Board, subject to the rights of the holders of all classes of stock outstanding having priority rights to dividends. As of December 31, 2023, the Company had not declared any dividends. The holder of each share of Common Stock is entitled to one vote. There were 145,706,531 and 143,034,225 shares of Common Stock (including 4,500,000 Sponsor Vesting Shares not indexed to equity) outstanding as of December 31, 2023 and 2022, respectively.

Employee Stock Purchase Plan

The Company maintains an Employee Stock Purchase Plan (“ESPP”). The ESPP permits participants to purchase shares of our Common Stock with the purchase price of the shares at a price determined by our Board, which shall not be less than 85% of the lower of the fair market value of our Common Stock on the first day of an offering or on the date of purchase.

Initially, following adoption of the ESPP, the maximum number of shares of our Common Stock that may be issued under the ESPP was 1,846,710. The ESPP contains an “evergreen” share reserve feature that automatically increases the number of shares of Common Stock reserved for issuance under the plan on January 1 of each year for a period of ten years commencing on January 1, 2022 and ending on (and including) January 1, 2031 in an amount equal to the lesser of (1) one percent (1%) of the fully-diluted shares of our Common Stock on December 31st of the preceding calendar year, (2) 3,693,420 of Common Stock, or (3) such lesser number of shares as determined by our Board. As of December 31, 2023, the number of shares available for issuance under the ESPP was 5,639,944. Our Board made the decision not to increase the number of shares of Common Stock reserved for issuance under the ESPP as of January 1, 2024 as no stock has been offered or issued to employees under the ESPP to date. Shares subject to purchase rights granted under the ESPP that terminate without having been exercised in full will not reduce the number of shares available for issuance under the ESPP.

Equity Incentive Plans

The Company maintains the following equity incentive plans: the 2010 Stock Incentive Plan, the 2020 Equity Incentive Plan, and the 2021 Equity Incentive Plan, each as amended (together, the “Stock Plans”). Upon closing of the Merger, awards under the 2010 Stock Incentive Plan and 2020 Equity Incentive Plan were converted at the Exchange Ratio, which has the meaning set forth in the Merger Agreement, and the 2021 Equity Incentive Plan was adopted and approved.

Origin may grant a wide variety of equity securities under the Stock Plans, including incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, RSU awards, performance-based stock awards, and other awards. The Company has granted incentive stock options, RSU awards, and performance awards under the Stock Plans. Under the Stock Plans, options must be issued at exercise prices no less than the estimated fair value of the stock on the date of grant and are exercisable for a period not exceeding 10 years from the date of grant. Options granted to employees under the Stock Plans generally vest 25% one year from the vesting commencement date and 1/36th per month thereafter, although certain arrangements call for vesting over other periods. Options granted to non-employees under the Stock Plan vest over periods determined by the Board (generally immediate to four years). RSU awards granted to employees under the 2021 Equity Incentive Plan require a service period of three years and generally vest 33.3% annually over the three-year service period. Under the Stock Plans, the fair value of RSU awards and performance-based stock awards are determined to be the grant date closing stock price. For awards with performance-based conditions, compensation is recorded once there is sufficient objective evidence the performance conditions are considered probable of being met. The performance-based stock awards are subject to vesting based on a performance-based condition and a service-based condition. The performance-based stock awards will vest in a percentage of the target number of shares between 0% and 300%, depending on the extent the performance conditions are achieved.

Initially, following adoption of the 2021 Equity Incentive Plan, there were 18,467,109 shares of Common Stock reserved for issuance under the Stock Plans. The 2021 Equity Incentive Plan contains an “evergreen” share reserve feature that automatically increases the number of shares of Common Stock reserved for issuance under the plan on January 1 of each year for a period of ten years commencing on January 1, 2022 and ending on (and including) January 1, 2031 in an amount equal to five percent (5%) of the fully-diluted Common Stock on December 31 of the preceding year unless our board acts prior to January 1 to increase the share reserve by a lesser amount. The number of shares added to the share reserve on January 1 of a given year is reduced automatically to the extent necessary to avoid causing the share reserve to exceed fifteen percent (15%) of the fully-diluted Common Stock on December 31 of the preceding year. As of December 31, 2023, the number of shares available for issuance under the 2021 Equity Incentive Plan was 28,761,816, and there were 10,244,412 shares available for grant. On January 1, 2024, the number of shares of Common Stock reserved for issuance under the 2021 Equity Incentive Plan was automatically increased by 1,242,387 shares pursuant to the 2021 Plan’s “evergreen” provision to a total of 30,004,203 shares.

The following tables summarize stock option activity under the Stock Plans:

	Outstanding Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Aggregate intrinsic value (in thousands)
Balance as of December 31, 2022	6,471,062	\$ 0.17	7.29	
Granted	—	—		
Exercised	(959,143)	0.15		
Forfeited / canceled	(33,909)	0.14		
Balance as of December 31, 2023	5,478,010	\$ 0.17	6.05	
Vested and expected to vest at December 31, 2023	5,478,010	\$ 0.17	6.05	\$ 3,638
Vested and exercisable at December 31, 2023	3,501,925	\$ 0.19	5.62	\$ 2,263

During the years ended December 31, 2023 and 2022, the Company did not grant any stock options. As of December 31, 2023, there were 3,501,925 options exercisable. The total intrinsic value of the options exercised during the year ended December 31, 2023 and 2022 was \$2.5 million and \$8.5 million, respectively. The intrinsic value of options exercised during each fiscal year is calculated as the difference between the market value of the stock at the time of exercise and the exercise price of the stock option. As of December 31, 2023, the Company had stock-based compensation of \$1.7 million, related to unvested stock options not yet recognized that is expected to be recognized over an estimated weighted average period of 0.8 years.

The Company issued 2,920,732 of performance and market-based stock options during 2020. During the quarter ended March 31, 2021, the Company modified the vesting schedule of 529,119 of these performance and market-based stock options such that vesting of 1/48th per month would commence upon signing of the Business Combination. The Company entered into the Merger Agreement on February 16, 2021 resulting in the commencement of expense recognition related to these 529,119 options during the quarter ended March 31, 2021. For the remaining 2,391,613 performance and market-based stock options, expense commenced on the close date of the Merger, June 25, 2021, as that is the date when the performance condition was achieved.

The following table summarizes the RSU award and performance-based stock award activity:

	Outstanding	Weighted- average grant date fair value
Unvested balance at December 31, 2022	6,371,950	\$ 6.24
Granted - RSU awards	9,374,125	1.19
Granted - performance-based stock awards	455,368	0.93
RSU awards vested and converted to shares	(1,919,853)	5.49
Vested - performance-based stock awards	—	—
Forfeited - RSU awards	(680,036)	4.89
Forfeited - performance-based stock awards	(555,450)	6.81
Unvested balance at December 31, 2023	<u>13,046,104</u>	<u>\$ 2.54</u>
Expected to vest	<u>10,927,261</u>	

The RSU awards entitle the holder upon vesting to be issued on a future date the number of shares of Common Stock that is equal to the number of restricted stock units subject to the RSU awards. The total fair value of shares vested during the year ended December 31, 2023 and 2022 was \$2.7 million and \$3.6 million, respectively. The number of RSU awards vested during 2023 totaled 1,919,853, of which the issuance of 165,956 common shares has been deferred at the election of the participant. The common shares for the deferred RSUs will be released sixty days following the participant's departure from the Company. The common shares for an additional 40,734 RSU awards vested during 2023 will be issued in 2024. The Company issued 455,368 performance-based stock awards during 2023. During the year ended December 31, 2023, the performance conditions for all of the outstanding performance-based stock awards were not probable of being met, therefore no performance award stock compensation has been recorded. During the year ended December 31, 2022, one performance condition for the granted performance-based stock awards was met, therefore performance-based award stock compensation of \$2.8 million was recorded. As of December 31, 2023, there were 1,202,434 unvested performance-based awards subject to certain performance criteria for vesting. The vesting period for RSU awards is generally three years. Total remaining compensation expense for RSU awards to be recognized under the 2021 Equity Incentive Plan is \$19.3 million as of December 31, 2023, and will be amortized on a straight-line basis over an estimated weighted average period of 2.2 years. The maximum amount of stock-based compensation expense for the unvested performance-based stock awards, assuming maximum performance, is \$11.4 million. Total remaining compensation expense for performance-based stock awards will be recognized over the requisite service periods once the performance-based conditions are deemed to be probable.

The Company effected a workforce reduction in November 2023 of which approximately 30% of total employees were impacted. This reduction, as part of our organizational realignment, reflects the deferral of research programs with longer-term economic impacts and the acceleration of higher-margin revenue opportunities. The Board authorized certain changes to the stock-based awards in connection with the workforce reduction plan to allow accelerated vesting of a portion of affected employees' unvested equity awards. The Company recorded a total workforce reduction charge of \$0.2 million in the fourth quarter of 2023. The charge consists of severance and benefits costs, inclusive of cash expenditures for employee separation costs of \$0.5 million and non-cash charges of \$(0.3) million for stock based compensation expense. \$0.4 million associated with the modification of certain equity awards, offset by \$(0.7) million related to equity awards forfeited by the affected employees. The cash expenditures and non-cash stock based compensation expense for employee separation costs was recorded in general and administrative and research and development expenses on the consolidated statements of operations and comprehensive income and a portion was capitalized within construction in progress on the consolidated balance sheets.

During the year ended December 31, 2023 and 2022, stock compensation expense of \$6.5 million and \$4.7 million, respectively, was recognized in general and administrative expenses in the consolidated statements of operations and comprehensive income. During the year ended December 31, 2023 and 2022 stock compensation expense of \$2.9 million and \$2.5 million, respectively, was recognized in research and development expenses in the consolidated statements of operations and comprehensive income.

16. Income Taxes

Income before income tax expenses consisted of the following for the year ended:

(in thousands)	December 31, 2023	December 31, 2022
United States	\$ 22,481	\$ 81,269
Foreign	230	(2,700)
Income before income tax expenses	<u>\$ 22,711</u>	<u>\$ 78,569</u>

The federal, state, and foreign income and deferred tax expenses are summarized as follows for the year ended:

(in thousands)	December 31, 2023	December 31, 2022
Current		
Federal	\$ —	\$ —
State	20	3
Foreign	139	—
Total current tax expenses	<u>\$ 159</u>	<u>\$ 3</u>
Deferred		
Federal	\$ —	\$ —
State	—	—
Foreign	(1,246)	—
Total deferred tax benefits	<u>\$ (1,246)</u>	<u>\$ —</u>
Total tax expenses	<u>\$ (1,087)</u>	<u>\$ 3</u>

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, and operating losses and tax credit carryforwards.

The tax effects of significant items comprising the Company's deferred taxes are as follows for the year ended:

(in thousands)	December 31, 2023	December 31, 2022
Deferred tax assets		
Net operating loss carryforwards	\$ 34,076	\$ 27,210
Available for sale marketable securities	825	2,064
Lease liabilities	1,050	532
Other	51	36
Fixed assets and intangibles	445	25
Capitalized research and development costs	4,456	1,929
Stock Compensation	2,806	1,544
Total deferred tax assets	<u>\$ 43,709</u>	<u>\$ 33,340</u>
Deferred tax liabilities		
ROU asset	\$ (1,012)	\$ (515)
Other	(16)	—
Fixed assets and intangibles	—	(479)
Total deferred tax liabilities	<u>\$ (1,028)</u>	<u>\$ (994)</u>
Valuation allowance	<u>\$ (41,420)</u>	<u>\$ (32,346)</u>
Net deferred taxes	<u>\$ 1,261</u>	<u>\$ —</u>

ASC 740 requires that the tax benefit of net operating losses, temporary differences and credit carryforwards be recorded as an asset to the extent that management assesses that realization is more likely than not. Realization of the future tax benefits is dependent on the Company's ability to generate sufficient taxable income within the carryforward period. Regarding the Origin US entities, the Company is in a significant cumulative loss position and has provided a valuation allowance against the US net deferred tax assets. Origin Canada is recognizing income and is projecting future taxable income sufficient to offset all its deferred tax assets. Therefore, some of the deferred tax assets in Canada are being recognized in 2023.

The valuation allowance increased by \$9.1 million and \$6.7 million for the years ended December 31, 2023 and 2022, respectively.

At December 31, 2023, we had federal net operating loss carryforwards of approximately \$139.7 million to offset future federal taxable income, with \$42.0 million available through 2037 and \$97.7 million available indefinitely. We have state net operating loss carryforward of \$42.8 million, available through 2043. We had foreign net operating loss carryforwards of approximately \$7.2 million that may offset future foreign taxable income through 2043.

At December 31, 2023, the Company has research and experimentation credit carryforwards of \$0.03 million for foreign tax purposes that expire after 2038. The Company plans to evaluate its R&D credits in the future and amend prior year federal and California tax returns to claim credits, which will carryforward to offset future income tax liability.

The effective tax rate of the Company's provision (benefit) for income taxes differs from the federal statutory rate as follows for the year ended:

	<u>December 31, 2023</u>	<u>December 31, 2022</u>
Statutory rate	21.0 %	21.0 %
State tax	(12.2)	1.1
Foreign tax	0.6	—
Warrants and other equity items	(65.3)	(28.7)
Valuation allowance	46.8	6.4
Other	0.5	0.7
Foreign rate differential	0.6	(0.2)
Stock-based compensation	3.2	(0.3)
Total	<u>(4.8)%</u>	<u>— %</u>

The effective tax rate of the Company's provision (benefit) for income taxes differs from the federal statutory rate as follows for the year ended:

	<u>December 31, 2023</u>	<u>December 31, 2022</u>
Statutory rate	\$ 4,769	\$ 16,500
State tax	(2,761)	875
Foreign tax	139	—
Warrants and other equity items	(14,808)	(22,559)
Valuation allowance	10,629	5,040
Other	98	502
Foreign rate differential	128	(148)
Stock-based compensation	719	(207)
Total	<u>\$ (1,087)</u>	<u>\$ 3</u>

Under certain provisions of the Internal Revenue Code of 1986, as amended, a portion of the federal and state net operating loss carryforwards may be subject to an annual utilization limitation as a result of a change in ownership of the Company. Federal and California tax laws impose significant restrictions on the utilization of net operating loss carryforwards in the event of a change in ownership of the Company, as defined by Internal Revenue Code Section 382 ("Section 382"). The Company has experienced ownership changes as defined by IRC Section 382 and the impact of those changes has been reflected in the consolidated financial statements. In addition, in the future the Company may experience ownership changes, which may limit the utilization of net operating loss carryforwards or other tax attributes.

There were no unrecognized tax benefits in the years ended December 31, 2023 and 2022. The Company files income tax returns in the United States, various US states, and Canada. All tax years remain open in all jurisdictions. The Company is not currently under examination by income tax authorities in federal, state or other foreign jurisdictions. The Company does not anticipate any significant changes within 12 months of this reporting date of its uncertain tax positions.

17. Leases

The Company leases office space and research and development space in Sacramento, California and Sarnia, Ontario under non-cancelable lease agreements and leases various office equipment, and warehouse space. Certain operating leases contain options to extend the lease. The Company included the periods covered by these options as we are reasonably certain to exercise the options for all leases. For leases with the option to extend on a month-to-month basis after the defined extension periods, the Company is reasonably certain to extend for the same term as related leases. As such, lease terms for all leased assets located at the same locations have the same end dates. Rent deposits relating to leases are included within other long-term assets on the consolidated balance sheets. Variable lease costs include operating expenses for the shared common area, and the amount is based on an annual estimate of the actual common area expenses from the preceding year and are payable monthly. Certain leases were extended during the period ended September 30, 2023. The lease modifications were not accounted for as a separate contract and we remeasured our lease liabilities and ROU assets on the modification date. Our operating leases have remaining lease terms of one to ten years.

The Company elected the accounting policy election to account for lease and nonlease components as a single lease component for all asset classes. Further, the Company elects to recognize lease payments on short-term leases in profit or loss on a straight-line basis over the lease term for all asset classes, excluding such leases from recognition requirements under ASC 842.

The components of lease cost were as follows for the year ended:

(in thousands)	December 31, 2023	December 31, 2022
Operating lease cost	\$ 807	\$ 671
Variable lease cost	109	107
Total lease cost	<u>\$ 916</u>	<u>\$ 778</u>

Other information related to leases is as follows:

(in thousands)	December 31, 2023	December 31, 2022
Operating lease ROU asset	\$ 4,468	\$ 2,779

Weighted average remaining lease term (in years):

Operating leases	9.49	5.28
Weighted average discount rate:		
Operating leases	7.4 %	3.4 %

(in thousands)	December 31, 2023	December 31, 2022
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	\$ 726	\$ 572
Operating lease ROU assets obtained in exchange for lease obligations	\$ 2,308	\$ 1,687

To calculate the ROU assets and lease liabilities, the Company uses the discount rate implicit in lease agreements when available. When the implicit discount rates are not readily determinable, the Company uses the incremental borrowing rate, determined as of the later of the date of adoption for ASC 842, date of lease inception or date of lease modification. This rate is determined for individual leases based on available information regarding jurisdiction, lease term, and asset class. Further, the interest environment was considered, including analysis of benchmark rates from promissory notes, credit curve yields for bonds, and synthetic curves based on discount margin spreads.

Maturities of operating lease liabilities as of December 31, 2023 were as follows:

(in thousands)	<u>December 31</u>
2024	\$ 687
2025	636
2026	607
2027	595
2028	612
Thereafter	<u>3,348</u>
Total lease payments	6,485
Less: imputed interest	(1,911)
Less: operating lease liabilities, current	(367)
Operating lease liabilities, non-current	<u>\$ 4,207</u>

18. Commitments and Contingencies

Commitments

In connection with the closing of the Merger, the Company entered into the Investor Rights Agreement on June 25, 2021 (the “Investor Rights Agreement”), pursuant to which the holders of Registrable Securities (as defined therein) became entitled to, among other things, customary registration rights, including demand, piggy-back and shelf registration rights. The Investor Rights Agreement also provides that the Company will pay certain expenses relating to such registrations and indemnify the registration rights holders against (or make contributions in respect of) certain liabilities which may arise under the Securities Act. On July 15, 2021, the Company registered the Registrable Securities for resale pursuant to a Registration Statement on Form S-1, as amended (File No. 333-257931), which became effective on July 30, 2021. The Company filed Post-Effective Amendment No. 2 to the Registration Statement on Form S-1 on Form S-3 (File No. 333-257931), which became effective on August 8, 2022.

In May 2018, the Company executed the agreements for certain services, to facilitate the development and thus bring Origin 1 to the condition necessary for its intended use, commencing in different periods between July 2018 and September 2019, and all generally for five years periods. The agreements are generally automatically extended for one year periods thereafter. The agreements include annual fixed payments subject to escalation clauses at the beginning of each calendar year, as defined in the agreement. The minimum fixed payments are \$0.4 million per year over the fixed term. Certain of the agreements include quantities that are based on volumes, as defined in the applicable agreements. The Company is also responsible for applicable taxes under these agreements. The total amount capitalized into property, plant and equipment, net under the agreement was \$0.6 million and \$1.5 million during the year ended December 31, 2023 and 2022, respectively.

In April 2023, the Company entered into an agreement for conversion of materials produced by Origin 1 into certain derivatives. Pursuant to the agreement, the Company agreed to purchase conversion services for a certain minimum quantity of product on a take-or-pay basis for a term of 5 years beginning in 2025 for an aggregate total cost of \$33.0 million. Accordingly the Company is obligated to purchase not less than \$5.0 million during 2025 and a minimum of \$7.0 million each of 2026 through 2029. The Company made advance payments totaling \$11.5 million to the counterparty as of December 31, 2023, which is included in the foregoing aggregate total, and the agreement provides for the Company to be fully reimbursed for the advance payments in the form of a discount on conversion services over the term. The agreement gives the Company the right, but not the obligation, to purchase conversion services for an additional quantity of product in 2024 and stipulates a reduction in the take-or-pay commitment under certain circumstances including the counterparty’s inability to meet the required product specification. The agreement automatically renews for an additional year unless either party gives advance notice of an intention not to renew. In addition, either party may terminate the agreement in the event of the other party’s insolvency or breach of a material term. The Company recorded the advance payments as other long-term assets on the consolidated balance sheets.

In February 2023, the Company entered into a nonexclusive patent license agreement for use in connection with production at a specific licensed facility. The license expires upon cessation of production at that facility. The Company made a nonrefundable \$5.0 million deposit in 2022 toward securing the license and, as a result of signing the license agreement, made an additional nonrefundable payment of \$7.9 million during 2023 and may make additional payments depending on the achievement of certain milestones. The total payment is included in other long-term assets. In connection with this license, the Company entered into a conditional offtake agreement under which the licensor will supply the Company with a certain amount of the same type of products to be produced at the licensed facility in order to accelerate market development for these products and related applications.

In July 2017, the Company entered into a nonexclusive patent license agreement for \$0.1 million, which expires upon expiration of the last to expire of the licensed patents. Under this agreement, the Company will pay less than \$0.1 million minimum royalty payments per year and, if the Company develops and sells certain products based on the licensed patents. Certain products that Origin is currently developing and anticipates selling are expected to utilize these patents.

In December 2016, the Company entered into a patent license agreement for \$0.5 million, which expires upon expiration of the last to expire of the licensed patents. Under this agreement, if the Company develops and sells specific products based on the patents, the Company would pay a royalty up to a cumulative \$0.5 million from Origin 1, whereby no further payments will be due for any production at Origin 1. If production of those products occurs at subsequent facilities, the Company will pay an upfront license fee royalty and a variable royalty based on production at that subsequent facility, capped at an aggregate \$10 million per facility. Certain products that the Company is currently developing and anticipates selling are expected to utilize these patents. No payments were made during the year ended December 31, 2023 and 2022.

In November 2016, the Company entered into a nonexclusive patent license agreement, which expires upon expiration of the patent. Under this agreement, if the Company produces products based on the patent, the Company will pay an annual royalty upon commencement of operations on Origin 1 which will not exceed \$1.0 million cumulatively. The pipeline of Company products and sales are not currently expected to be subject to this patent. The annual royalty payments are less than \$0.1 million.

In September 2011, the Company entered into a nonexclusive patent license agreement, which expires upon expiration of the patent. Under this agreement, if the Company develops and sells specific products based on the patent, the Company would pay a royalty up to \$2.0 million per year and \$10.0 million in the aggregate. Certain products that the Company is currently developing and anticipates selling are expected to utilize these patents. No payments were made during the year ended December 31, 2023 and 2022.

In June 2011, the Company entered into a nonexclusive patent license agreement, which expires upon expiration of the licensed patent. Under this agreement, the Company pays less than \$0.1 million royalty fee annually and if the Company develops and sells specific products based on the patent, 0.4% of net sales. The pipeline of Company products and sales are not currently expected to be subject to this patent.

We enter into supply and service arrangements in the normal course of business. Supply arrangements are primarily for fixed-price manufacture and supply. Service agreements are primarily for the development of manufacturing processes and certain studies. Commitments under service agreements are subject to cancellation at our discretion which may require payment of certain cancellation fees. The timing of completion of service arrangements is subject to variability in estimates of the time required to complete the work.

Contingencies

At times there may be claims and legal proceedings generally incidental to the normal course of business that are pending or threatened against the Company. For instance, in August 2023, a shareholder filed a putative securities class action complaint in the Eastern District of California against the Company and certain of its officers, alleging violations of the federal securities laws. An additional complaint, alleging the same claims against the same defendants, was filed in October 2023. Both cases allege a class period of February 23, 2023 to August 9, 2023, and seek as relief, among other things, unspecified damages and fees and costs. The two cases have since been consolidated into *In re Origin Materials, Inc. Sec. Litig.*, No. 2:23-cv-01816-WBS-JDP (E.D. Cal.). A lead plaintiff was appointed for the consolidated case on December 14, 2023 and filed an amended complaint on March 1, 2024. At this preliminary stage in the litigation, the Company cannot predict any particular outcome or financial impact thereof, if any.

19. Basic and Diluted Net Income Per Share

The following table sets forth the computation of basic and diluted net income per share attributable to common stockholders. Basic net income per share is computed by dividing net income for the period by the weighted-average number of common shares outstanding during the period, which excludes Sponsor Vesting Shares which are legally outstanding, but subject to return to the Company. Diluted net income per share is computed by dividing net income for the period by the weighted-average common shares outstanding during the period, plus the dilutive effect of the stock options and RSU awards, as applicable pursuant to the treasury stock method. The following table sets forth the computation of basic and diluted net income per share:

(In thousands, except for share and per share amounts)

	Year Ended December 31,	
	2023	2022
Numerator:		
Net income attributable to common stockholders—Basic	\$ 23,798	\$ 78,569
Net income attributable to common stockholders—Diluted	\$ 23,798	\$ 78,569
Denominator:		
Weighted-average common shares outstanding—Basic ⁽¹⁾	139,718,385	137,563,877
Stock options	2,872,491	4,571,301
RSU awards	67,547	11,589
Weighted-average common shares outstanding—Diluted ⁽¹⁾	142,658,423	142,146,767
Net income per share—Basic	\$ 0.17	\$ 0.57
Net income per share—Diluted	\$ 0.17	\$ 0.55

(1) Excludes weighted-average Sponsor Vesting Shares subject to return of 4,500,000 shares for the year ended December 31, 2023 and 2022.

Diluted earnings per share reflect the potential dilution of securities that could share in the earnings of an entity. The following potentially dilutive securities for common stock were outstanding and excluded from diluted earnings per share as they are subject to performance or market conditions that were not probable of being achieved as follows:

	Year Ended December 31,	
	2023	2022
Options to purchase common stock	1,481,531	1,481,531
Performance-based stock awards	2,018,934	2,218,925
Earnout shares	25,000,000	25,000,000
Sponsor vesting shares	4,500,000	4,500,000

The following outstanding shares of out-of-the-money options and potentially dilutive warrants were excluded from the computation of diluted net income per share attributable to common stockholders for the periods presented because including them would have been antidilutive:

	Year Ended December 31,	
	2023	2022
Options to purchase common stock	41,357	—
Warrants to purchase common stock	35,476,667	35,476,667

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosures

None.

Item 9A. Controls and Procedures

Limitations on Effectiveness of Controls and Procedures

In designing and evaluating our “disclosure controls and procedures,” as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and “internal control over financial reporting,” as such term is defined in Rule 13a-15(f) under the Exchange Act, our management, including our Co-Chief Executive Officers and Chief Financial Officer, believe that our disclosure controls and procedures and our internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. Our management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all instances of fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control deficiencies and instances of fraud, if any, have been detected. The design of any system of controls also is based partly on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

Evaluation of Disclosure Controls and Procedures

Our management, under the direction of our Co-Chief Executive Officers and Chief Financial Officer, has evaluated the effectiveness of the design and operation of our disclosure controls and procedures as of the period covered by this Annual Report on Form 10-K. Based on this evaluation, our management, including our Co-Chief Executive Officers and Chief Financial Officer, has concluded that, as of December 31, 2023, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our management, under the supervision and with the participation of our Co-Chief Executive Officers and Chief Financial Officer, conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2023. In making this evaluation, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control—Integrated Framework (2013). Based upon the results of its evaluation, our management concluded that, as of December 31, 2023, our internal control over financial reporting was effective.

This annual report does not include an attestation report of the Company’s registered public accounting firm regarding internal control over financial reporting. The Company’s internal control over financial reporting was not subject to attestation by the Company’s registered public accounting firm as we are a non-accelerated filer.

Our management will continue to monitor and evaluate the effectiveness of its disclosure controls and procedures, as well as its internal control over financial reporting, on an ongoing basis, and is committed to taking further action and implementing additional improvements, as necessary and as funds allow. Our management believes that there are no material inaccuracies or omissions of material fact and, to the best of its knowledge, believes that the consolidated financial statements included in this annual report present fairly, in all material respects, our financial position, results of operations, and cash flows for the periods presented in conformity with accounting principles generally accepted in the United States.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fourth quarter of the fiscal year ended December 31, 2023 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

Rich Riley, Co-CEO and Director, entered into a prearranged stock trading plan on December 15, 2023. Mr. Riley’s plan provides for the sale of up to 600,000 shares of the Company’s common stock between March 15, 2024 and December 31, 2024. This trading plan was entered into during an open trading window and is intended to satisfy the affirmative defense of Rule 10b5-1(c) under the Securities Exchange Act of 1934, as amended, and the Company’s policies regarding transactions in the Company’s securities.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

Our Code of Business Conduct and Ethics applies to all of our employees, officers and directors. This includes our principal executive officer, principal financial officer and principal accounting officer or controller, or persons performing similar functions. The full text of our Code of Business Conduct and Ethics may be viewed at the investors relations portion of our website at <https://investors.originmaterials.com/>, in the section entitled “Investors—Governance—Governance Documents.” We intend to satisfy the disclosure requirements under Item 5.05 of the SEC Form 8-K regarding an amendment to, or waiver from, a provision of our Code of Business Conduct and Ethics by posting such information on our website at the website address and location specified above.

Other information required by this item is incorporated by reference to the information to be set forth in our Proxy Statement.

Item 11. Executive Compensation

The information required by this item is incorporated by reference to the information to be set forth in our Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated by reference to the information to be set forth in our Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference to the information to be set forth in our Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to the information to be set forth in our Proxy Statement.

Part IV

Item 15. Exhibit and Financial Statement Schedules

(a) Exhibits.

The exhibits listed below are filed as part of this Annual Report on Form 10-K (or are incorporated by reference herein):

Exhibit No.	Description	Form	Incorporated by Reference		
			File No.	Exhibit	Filing Date
2.1+	Agreement and Plan of Merger, dated as of February 16, 2021.	S-4/A	333-254012	2.1	May 25, 2021
2.2	Letter Agreement, dated as of March 5, 2021.	S-4/A	333-254012	2.2	May 25, 2021
3.1	Amended and Restated Certificate of Incorporation of the Company.	8-K	001-39378	3.3	July 1, 2021
3.2	Bylaws of the Company.	8-K	001-39378	3.2	June 29, 2021

3.3	Amendment No. 2 to Offtake Supply Agreement (Origin 2) by and between Origin Materials Operating, Inc. and Pepsi-Cola Advertising and Marketing, Inc., dated May 10, 2023.	10-Q	001-39378	3.3	May 10, 2023
3.4	Transition, Separation and Advisory Agreement between the Company and Nate Whaley dated June 14, 2023	8-K	001-39378	NA	June 13, 2023
4.1	Specimen Common Stock Certificate of the Company.	S-4/A	333-254012	4.5	May 25, 2021
4.2	Specimen Warrant Certificate of the Company.	S-1/A	333-239421	4.3	July 2, 2020
4.3	Warrant Agreement between the Company and Continental Stock Transfer & Trust Company, dated July 13, 2020.	8-K	001-39378	4.1	July 16, 2020
4.4	Certificate of Corporate Domestication of Artius.	S-4/A	333-254012	4.6	May 25, 2021
4.5	Description of Securities.	10-K	001-39378	4.5	March 1, 2022
10.1#	Form of Performance Stock Unit Agreement under the Origin Materials 2021 Equity Incentive Plan	10-Q	001-39378	10.1	November 12, 2021
10.2#	Form of Restricted Stock Unit Agreement under the Origin Materials 2021 Equity Incentive Plan	10-Q	001-39378	10.2	November 12, 2021
10.3#	Form of Director Stock Unit Agreement under the Origin Materials 2021 Equity Incentive Plan	10-Q	001-39378	10.3	November 12, 2021
10.4*	Amendment No. 1 to Offtake Supply Agreement by and between Origin Materials Inc. and Danone Asia Pte Ltd. dated August 1, 2022	10-K	001-39378	10.4	February 23, 2023
10.5	Investor Rights Agreement, by and between the Company and certain stockholders, dated June 25, 2021.	8-K	001-39378	10.5	June 25, 2021
10.6#	Form of Indemnification Agreement.	8-K	001-39378	10.6	June 25, 2021
10.7#*	Amended and Restated Non-Employee Director Compensation Policy.				
10.8#	Micromidas, Inc. 2010 Stock Incentive Plan, as amended.	S-4/A	333-254012	10.1	May 25, 2021
10.9#	Forms of Incentive Stock Option Award Notice, Incentive Stock Option Award Agreement, Exercise Notice and Investment Representation Statement under the 2010 Stock Incentive Plan.	S-4/A	333-254012	10.2	May 25, 2021
10.10#	Micromidas, Inc. 2020 Equity Incentive Plan.	S-4/A	333-254012	10.3	May 25, 2021
10.11#	Forms of Stock Option Grant Notice, Option Agreement and Exercise Notice under the 2020 Equity Incentive Plan.	S-4/A	333-254012	10.4	May 25, 2021
10.12#	Origin Materials 2021 Equity Incentive Plan.	8-K	001-39378	10.12	June 25, 2021
10.13#	Form of Stock Option Grant Notice, Stock Option Agreement, Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under the 2021 Equity Incentive Plan.	8-K	001-39378	10.13	June 25, 2021
10.14#	Origin Materials 2021 Employee Stock Purchase Plan.	8-K	001-39378	10.14	June 25, 2021
10.15#	Offer Letter, dated October 28, 2020, by and between Micromidas, Inc. and Rich Riley.	S-4/A	333-254012	10.7	May 25, 2021
10.16#	Offer Letter, dated January 9, 2018, by and between Micromidas, Inc. and Joshua Lee.	S-4/A	333-254012	10.8	May 25, 2021

10.17#	Offer Letter, dated August 11, 2020, by and between Micromidas, Inc. and Nate Whaley.	S-4/A	333-254012	10.9	May 25, 2021
10.18	Standard Industrial/Commercial Multi-Tenant Lease for 930 Riverside Parkway, Suites 10-30, West Sacramento, CA 95605, by and between Harsch Investment Properties, LLC and Micromidas, Inc., dated May 22, 2020.	S-4/A	333-254012	10.10	May 25, 2021
10.19	Standard Industrial/Commercial Multi-Tenant Lease for 970 Riverside Parkway, Suite 40, West Sacramento, CA 95605, by and between Harsch Investment Properties, LLC and Micromidas, Inc., dated February 28, 2013.	S-4/A	333-254012	10.11	May 25, 2021
10.20	Second Amendment to Lease for 970 Riverside Parkway, Suite 40, West Sacramento, CA 95605, by and between Harsch Investment Properties, LLC and Micromidas, Inc., dated May 11, 2015.	S-4/A	333-254012	10.12	May 25, 2021
10.21	Third Amendment to Lease for 970 Riverside Parkway, Suite 40, West Sacramento, CA 95605, by and between Harsch Investment Properties, LLC and Micromidas, Inc., dated May 22, 2020.	S-4/A	333-254012	10.13	May 25, 2021
10.22	Form of Sponsor Letter Agreement.	S-4/A	333-254012	10.16	May 25, 2021
10.23	Private Placement Warrants Purchase Agreement between the Company and Artius Acquisition Partners LLC.	8-K	001-39378	10.3	July 16, 2020
10.24	Amended and Restated Secured Promissory Note, by and among Micromidas, Inc., Origin Materials Canada Holding Limited, Origin Materials Canada Pioneer Limited and Danone Asia Pte Ltd, dated May 17, 2019.	S-4/A	333-254012	10.33	May 25, 2021
10.25	First Amendment to Amended and Restated Secured Promissory Note, by and among Micromidas, Inc., Origin Materials Canada Holding Limited, Origin Materials Canada Pioneer Limited and Danone Asia Pte Ltd, dated November 8, 2019.	S-4/A	333-254012	10.34	May 25, 2021
10.26	Second Amendment to Amended and Restated Secured Promissory Note, by and among Micromidas, Inc., Origin Materials Canada Holding Limited, Origin Materials Canada Pioneer Limited and Danone Asia Pte Ltd, dated May 21, 2020.	S-4/A	333-254012	10.35	May 25, 2021
10.27	Third Amendment to Amended and Restated Secured Promissory Note, by and among Micromidas, Inc., Origin Materials Canada Holding Limited, Origin Materials Canada Pioneer Limited and Danone Asia Pte Ltd, dated January 22, 2021.	S-4/A	333-254012	10.36	May 25, 2021
10.28+^	Offtake Supply Agreement, by and between Micromidas, Inc. and Pepsi-Cola Advertising and Marketing, Inc., dated August 3, 2018.	S-4/A	333-254012	10.42	May 25, 2021
10.29^	Amendment No. 1 to Offtake Supply Agreement, by and between Micromidas, Inc. and Pepsi-Cola Advertising and Marketing, Inc., dated October 24, 2019.	S-4/A	333-254012	10.43	May 25, 2021

10.30+^	Amended and Restated Offtake Supply Agreement, by and between Micromidas, Inc. and Danone Asia Pte Ltd, dated May 17, 2019.	S-4/A	333-254012	10.44	May 25, 2021
10.31+^	Offtake Supply Agreement, by and between Micromidas, Inc. and Packaging Equity Holdings, LLC, dated December 13, 2020.	S-4/A	333-254012	10.46	May 25, 2021
10.32+^	Offtake Supply Agreement (Origin 2) by and between Origin Materials Operating, Inc. and Danone Asia Pte Ltd, dated August 1, 2022.	POS-AM	333-257931	10.51	August 3, 2022
10.33+^	Fourth Amendment to Amended and Restated Secured Promissory Note by and between Origin Materials Operating, Inc. and Danone Asia Pte Ltd, Origin Materials Canada Holding Limited, and Origin Materials Canada Pioneer Limited, dated August 1, 2022.	POS-AM	333-257931	10.52	August 3, 2022
10.34^	Second Amendment to the Offtake Supply Agreement by and between Danone Asia Pte Ltd. and the Company, dated as of July 10, 2023.	10-Q	001-39378	10.1	August 9, 2023
10.35^	First Amendment to Lease for 930 Riverside Parkway, Suite 40-60, West Sacramento, CA 95605, by and between Schnitzer Properties, LLC and Origin Materials Operating, Inc., dated August 1, 2023.	10-Q	001-39378	10.2	August 9, 2023
10.36^	First Amendment to Lease for 930 Riverside Parkway, Suite 70, West Sacramento, CA 95605, by and between Schnitzer Properties, LLC and Origin Materials Operating, Inc., dated August 1, 2023.	10-Q	001-39378	10.3	August 9, 2023
10.37^	Second Amendment to Lease for 930 Riverside Parkway, Suite 10-30, West Sacramento, CA 95605, by and between Schnitzer Properties, LLC and Origin Materials Operating, Inc., dated August 1, 2023.	10-Q	001-39378	10.4	August 9, 2023
10.38^	Fifth Amendment to Lease for 970 Riverside Parkway, Suite 40, West Sacramento, CA 95605, by and between Schnitzer Properties, LLC and Origin Materials Operating, Inc., dated August 1, 2023.	10-Q	001-39378	10.5	August 9, 2023
10.39^	Offer Letter, dated September 25, 2023, by and between Origin Materials, Inc. and Matthew Plavan.	8-K	001-39378	10.1	October 1, 2023
19.1*	Insider Trading Policy.				
16.1	Letter of Grant Thornton LLP, dated March 9, 2023				March 9, 2023
23.1*	Consent of Deloitte & Touche LLP, independent registered public accounting firm.				
23.2*	Consent of Grant Thornton LLP, independent registered public accounting firm.				
24.1*	Power of Attorney (included on signature page).				
31.1*	Certification of Co-Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended.				

- 31.2* Certification of Co-Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended.
- 31.3* Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended.
- 32.1*+ Certification of Co-Principal Executive Officers and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 97.1* Incentive Compensation Recoupment Policy.

- 101.INS* Inline XBRL Instance Document
- 101.SCH* Inline XBRL Taxonomy Extension Schema Document
- 101.CAL* Inline XBRL Taxonomy Extension Calculation Linkbase Document
- 101.DEF* Inline XBRL Taxonomy Extension Definitions Linkbase Document
- 101.LAB* Inline XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE* Inline XBRL Taxonomy Extension Label Linkbase Document

- 104 Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Filed herewith.

^ Certain confidential portions (indicated by brackets and asterisks) have been omitted from this exhibit in accordance with the rules of the Securities and Exchange Commission.

+ Schedules and exhibits have been omitted pursuant to Items 601(a)(5) and 601(b)(2) of Regulation S-K. The Company agrees to furnish supplementally a copy of any omitted schedule or exhibit to the SEC upon request.

Indicates a management or compensatory plan

+ Furnished herewith and not deemed to be “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended.

(b) Financial Statement Schedules.

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ORIGIN MATERIALS, INC.

Date: March 4, 2024

By: /s/ John Bissell

John Bissell

Co-Chief Executive Officer

(Co-Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints John Bissell, Rich Riley and Matt Plavan, and each of them, his or her true and lawful attorneys-in-fact and agents, each with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to do any and all things and execute any and all instruments that such attorney may deem necessary or advisable under the Securities Exchange Act of 1934, as amended, and any rules, regulations and requirements of the Securities and Exchange Commission in connection with this Annual Report and any and all amendments hereto, as fully and for all intents and purposes as he or she might do or could do in person, and hereby ratifies and confirms all that each of said attorneys-in-fact and agents, or his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Annual Report has been signed below by the following persons, being a majority of the Board of Directors of Origin Materials, Inc., on behalf of the registrant on the dates indicated.

Signature	Title	Date
<u>/s/ John Bissell</u> John Bissell	Co-Chief Executive Officer and Director (Co-Principal Executive Officer)	March 4, 2024
<u>/s/ Rich Riley</u> Rich Riley	Co-Chief Executive Officer and Director (Co-Principal Executive Officer)	March 4, 2024
<u>/s/ Matthew Plavan</u> Matthew Plavan	Chief Financial Officer (Principal Financial and Accounting Officer)	March 4, 2024
<u>/s/ R. Tony Tripeny</u> R. Tony Tripeny	Chairperson of the Board	March 4, 2024
<u>/s/ Pia Heidenmark Cook</u> Pia Heidenmark Cook	Director	March 4, 2024
<u>/s/ Kathleen B. Fish</u> Kathleen B. Fish	Director	March 4, 2024
<u>/s/ William J. Harvey</u> William J. Harvey	Director	March 4, 2024
<u>John Hickox</u>	Director	March 4, 2024
<u>/s/ Craig A. Rogerson</u> Craig A. Rogerson	Director	March 4, 2024
<u>/s/ Jim Stephanou</u> Jim Stephanou	Director	March 4, 2024

