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**UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF CALIFORNIA**

In re ORIGIN MATERIALS, INC.  
SECURITIES LITIGATION

Master File No.: 2:23-cv-01816-WBS-JDP

SECOND AMENDED COMPLAINT FOR  
VIOLATIONS OF THE FEDERAL  
SECURITIES LAWS

This Document Relates To

ALL ACTIONS CONSOLIDATED FROM:

CLASS ACTION

Antonio F. Soto, individually and on behalf of  
all others similarly situated,

JURY TRIAL DEMANDED

Plaintiff,

v.

Origin Materials, Inc., Richard J. Riley, and  
John Bissell,

Defendants.

**TABLE OF CONTENTS**

		<b><u>Page</u></b>
1		
2		
3	I. INTRODUCTION .....	1
4	II. JURISDICTION AND VENUE .....	4
5	III. THE PARTIES.....	5
6	IV. SUBSTANTIVE ALLEGATIONS .....	6
7	A. Origin’s Sustainable Materials Business .....	6
8	B. Origin Reveals Plans for Commercial Plants and Touts the Importance of	
9	Origin 2 .....	8
10	C. Origin Provides Details on the Planning, Engineering, and Construction of	
11	Origin 2 .....	10
12	D. Origin Confirms and Promotes Origin 2’s Focus on Producing PET.....	12
13	E. Defendants Closely Monitor Origin 2’s Construction Timeline and Costs,	
14	and Reaffirm that the Plant is on Schedule to Open in Mid-2025 .....	15
15	F. Defendants Knew that Fouling Issues Were Delaying the Completion of	
16	Origin 2 and Would Result in a Product Shift Away from PX.....	17
17	G. Origin’s Offtake Agreements Further Evidence Defendants’ Knowledge of	
18	Origin 2’s Delay and Product Shift.....	20
19	1. Origin’s Partnership with Avantium.....	20
20	2. Origin’s Amendments to its Offtake Agreement with Pepsi .....	22
21	H. Defendants Finally Admit That Origin Was Not Constructing a PX/PET	
22	Plant and Would Not Start Up a New Origin 2 FDCA/PEF Plant Until 2028 .....	24
23	V. DEFENDANTS’ MATERIALLY FALSE AND MISLEADING STATEMENTS	
24	AND OMISSIONS .....	25
25	A. February 23, 2023 False and Misleading Statements .....	25
26	B. March 7, 2023 False and Misleading Statements .....	31
27	C. May 10, 2023 False and Misleading Statements .....	33
28	D. May 12, 2023 False and Misleading Statements .....	39

1 E. May 22, 2023 False and Misleading Statements ..... 41

2 F. June 8, 2023 False and Misleading Statements ..... 43

3 VI. THE TRUTH IS REVEALED.....46

4 A. Origin Reveals that Origin 2 Will Be Delayed, Cost More, Scaled Down,  
5 and No Longer Produce PX ..... 46

6 B. Origin 2’s Failure to Produce PX/PET and Stay on Schedule Has Lasting  
7 Negative Effects as the Company Lays Off 30% of its Workforce, and  
8 Receives Notice of Delisting ..... 50

9 VII. ADDITIONAL ALLEGATIONS OF SCIENTER.....51

10 A. Defendants Knew before February 23, 2023 that the Focus of Origin 2  
11 Had Shifted from PX, FEL 2 Was Delayed for the Plant, and the Company  
12 Would Not Meet the Plant’s Schedule..... 52

13 B. The Avantium Offtake Agreement Is Indicative of Scienter ..... 53

14 C. The Pepsi Offtake Agreement Amendments Are Indicative of Scienter ..... 56

15 D. The Fraud Impacted Origin’s Core Operations ..... 58

16 VIII. LOSS CAUSATION/ECONOMIC LOSS .....60

17 IX. PRESUMPTION OF RELIANCE: FRAUD ON THE MARKET.....62

18 X. CLASS ACTION ALLEGATIONS .....62

19 COUNT I FOR VIOLATIONS OF SECTION 10(b) OF THE EXCHANGE  
20 ACT AND RULE 10b-5(b) PROMULGATED THEREUNDER  
(AGAINST THE COMPANY AND INDIVIDUAL DEFENDANTS)..... 64

21 COUNT II FOR VIOLATIONS OF SECTION 20(a) OF THE EXCHANGE  
22 ACT (AGAINST THE INDIVIDUAL DEFENDANTS)..... 66

23 XI. PRAYER FOR RELIEF .....67

24 XII. JURY TRIAL DEMANDED.....67

25

26

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1           1.       Plaintiff Todd Frega (“Lead Plaintiff”), by and through his undersigned counsel, alleges  
2 the following upon information and belief, except as to those allegations concerning the Lead Plaintiff’s  
3 certification, which are alleged upon personal knowledge. Lead Plaintiff’s information and belief are  
4 based upon, among other things, Lead Counsel’s investigation, which includes without limitation: (i)  
5 review and analysis of Origin Materials, Inc. (“Origin” or the “Company”) public filings with the United  
6 States Securities and Exchange Commission (“SEC”); (ii) review and analysis of Defendants’ other  
7 public statements, including Origin press releases and interviews that Defendants participated in with  
8 various news sources; (iii) interviews with individuals who are former employees of Origin; (iv) review  
9 and analysis of reports of securities and financial analysts, news articles, and other commentary and  
10 analysis concerning Origin and the industry in which it operates; and (iv) review of pertinent court  
11 filings. Lead Plaintiff believes that additional evidentiary support will exist for the allegations set forth  
12 herein after a reasonable opportunity for discovery.

13 **I.       INTRODUCTION**

14           2.       Lead Plaintiff seeks to recover damages caused by Defendants’ violations of Sections  
15 10(b) and 20(a) of the Exchange Act (15 U.S.C. §§ 78j(b) and 78t(a)) and Rule 10b-5 promulgated  
16 thereunder by the SEC (17 C.F.R. § 240.10b-5) on behalf of a class of investors.

17           3.       This securities fraud class action is on behalf of a class of all persons who purchased  
18 Origin’s publicly traded securities on the open market of a U.S. stock exchange between February 23,  
19 2023 and August 9, 2023, inclusive (the “Class Period”), and were damaged thereby (the “Class”).

20           4.       Origin is a publicly traded company with its common stock listed on the Nasdaq Capital  
21 Market (“NASDAQ”) and is subject to the requirements of the Securities Exchange Act of 1934 (the  
22 “Exchange Act”).

23           5.       Origin is a sustainable materials company that purports to have developed a platform to  
24 convert the carbon found in plant-based carbon or non-food biomass, such as wood residues, into  
25 materials that can replace the petroleum-based substances typically used in various end products, such  
26 as food and beverage packaging, clothing, textiles, plastics, car parts, carpeting, tires, adhesives, and  
27 soil amendments. The Company describes its process as a “carbon negative” solution, meaning it  
28 removes or sequesters more CO<sub>2</sub> from the atmosphere than is emitted.

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1           6. One of the chemicals that Origin’s platform produces is a carbon-negative  
2 chloromethylfurfural (“CMF”), a versatile “building block” chemical that can be converted into, among  
3 other products: (1) paraxylene (“PX”), a product that can replace non-sustainable chemicals in existing  
4 supply chains to produce polyethylene terephthalate (“PET”); and (2) furandicarboxylic acid (“FDCA”),  
5 which can be converted into polyethylene furanoate (“PEF”).

6           7. Prior to the Class Period, on February 17, 2021, Origin announced its intention to go  
7 public via a merger with a special purpose acquisition company (“the Origin Merger”), and stated that  
8 it was undertaking a capital project to build the Company’s largest and first commercial-scale plant,  
9 called Origin 2, which would produce PX/PET.

10           8. Defendants represented that Origin 2’s construction would begin by mid-2023 and would  
11 be operational in mid-2025, and the plant was expected to supply most of the Company’s products from  
12 2025-2027. Defendants also represented that Origin 2 would cost \$1.07 billion and that the Company  
13 would not reach commercial scale production or generate positive earnings before interest, taxes,  
14 depreciation, and amortization (“EBITDA”) until 2025 (when Origin 2 was expected to become  
15 operational). Thus, the completion of Origin 2 was critical to Origin’s financial success and proof of  
16 large commercial production of its technology.

17           9. For almost two years spanning both before and during the Class Period, Defendants  
18 repeatedly assured investors that Origin 2’s operations date was on schedule for mid-2025. For example,  
19 during the Class Period, the Defendants advised the market that the Company was consistently “making  
20 progress” on Origin 2’s front-end design and construction planning and disseminated PowerPoint  
21 presentations on the Company’s website and with the SEC that detailed Origin 2’s schedule—  
22 construction of Origin 2 was on schedule to begin in mid-2023, with start up in mid-2025.

23           10. Defendants also represented both before and throughout the Class Period that Origin 2  
24 would produce PX/PET, consistently touted the importance of PET to investors, citing, among other  
25 things, PET’s limitless scope, large market, and low-margin, and claimed that “PET has by far the best  
26 end of life answer for” commodity materials generally.

27           11. By the first day of the Class Period, February 23, 2023, Defendants stated Origin had  
28 customer offload agreements for all of Origin 2’s PX/PET capacity and advised the market that the

1 Company may incorporate other products and applications into Origin 2 in addition to PX/PET (such as  
2 FDCA/PEF).

3 12. As late as June 8, 2023, near the end of the Class Period, the Company's co-CEO,  
4 Defendant Richard J. Riley ("Riley"), continued to represent to investors that PX/PET was the  
5 Company's "flagship" product.

6 13. Unbeknownst to investors, Origin 2 was not progressing on schedule for construction by  
7 mid-2023 or operations in mid-2025. At the beginning of the Class Period, Defendants knew that the  
8 Company could not produce PX/PET at Origin 2's intended scale and needed to implement alternatives.  
9 For months, Defendants and Origin employees discussed internally that: (a) Origin was experiencing  
10 fouling issues when trying to convert CMF to PX at commercial scale, resulting in the Company being  
11 unable to finalize the chemistry for Origin 2 and causing delays to the plant's engineering and front-end  
12 loading (FEL) development; (b) due to problematic economics of PX, Origin was being forced to pivot  
13 away from the product; and (c) although Origin started developing solutions to the chemical fouling  
14 issues surrounding PX, the solutions further delayed Origin 2's engineering designs and increased the  
15 plant's costs.

16 14. Defendants were aware that the technical fouling issues were causing delays to Origin  
17 2's construction schedule and forcing Origin to shift away from the production of PX at the plant. In  
18 fact, in December 2022, Origin's Co-CEOs, Riley and John Bissell ("Bissell"), led an internal Company  
19 meeting in which they specifically advised their employees of Origin 2's construction delay and the  
20 necessity of the plant either producing less PX or a new product entirely. Then, on March 3, 2023,  
21 Defendant Bissell disclosed internally that Origin 2 was being broken up into two phases, and that the  
22 plant was shifting to new products and no longer producing PX, which would further delay FEL 2 for  
23 the plant. Consistent with these undisclosed revelations, Defendants entered into an agreement with  
24 Avantium N.V. ("Avantium") in February 2023 to accelerate the production of FDCA, the product that  
25 would replace PX as the primary product of Origin 2.

26 15. Upon taking Origin 2 in a new direction and scraping years of the plant's development,  
27 Defendants recognized the insurmountable task of meeting the plant's forecasted schedule. In the face  
28 of this reality, Defendants amended Origin's offtake agreement with Pepsi, one of the Company's most

1 important clients and investors, in May 2023, to incorporate Origin 2's new focus on the production of  
2 FDCA and to account for the known delay to the plant's construction and commercial operations  
3 timelines.

4 16. On August 9, 2023, the last day of the Class Period, Defendants finally disclosed to the  
5 market that the Company had gone back to the drawing board for Origin 2. Everything that had been  
6 previously communicated to investors with respect to Origin 2 had changed: the construction and start-  
7 up dates were substantially delayed, the target product was entirely switched, the scale was severely  
8 reduced, and construction would cost significantly more. Specifically, Defendant Riley publicly  
9 disclosed for the first time that Origin's main production focus for Origin 2 would be FDCA (as opposed  
10 to PX) and that the construction of Origin 2 would be broken up into 2 phases with start-up for phase 1  
11 projected for late 2026 to 2027 and start-up for phase 2 pushed to 2028.

12 17. The shift in production focus from PX to FDCA had such a dramatic effect on Origin 2's  
13 original timeline that FDCA will not be produced at the plant until 2028, a delay of almost three years.

14 18. As a result of the disclosure, investors suffered substantial damages, as the stock price of  
15 Origin fell approximately 66.5% on August 10, 2023.

16 19. Origin's stock has never recovered. It continued to decline in the following weeks as the  
17 market understood that the Company's main source of future revenue – Origin 2 – was nowhere near  
18 completion. For example, by November 1, 2023, Origin's stock price had dropped an additional 68%  
19 since August 10, 2023.

20 20. On January 4, 2024, Origin disclosed that it had been notified by NASDAQ that it failed  
21 to meet the listing requirements as the Company's stock had closed below \$1.00 per share over 30  
22 consecutive business days.

## 23 **II. JURISDICTION AND VENUE**

24 21. The claims asserted herein arise under Sections 10(b) and 20(a) of the Exchange Act (15  
25 U.S.C. §§ 78j(b) and 78t(a)) and Rule 10b-5 promulgated thereunder by the SEC (17 C.F.R.  
26 § 240.10b-5).

27 22. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C.  
28 § 1331 and Section 27 of the Exchange Act (15 U.S.C. § 78aa).

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1 23. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391(b) and section 27 of  
2 the Exchange Act (15 U.S.C. § 78aa(c)). Substantial acts in furtherance of the alleged fraud or the  
3 effects of the fraud have occurred in this judicial district.

4 24. In connection with the acts, transactions, and conduct alleged herein, Defendants directly  
5 and indirectly used the means and instrumentalities of interstate commerce, including the United States  
6 mail, interstate telephone communications, and the facilities of national securities exchanges.

7 **III. THE PARTIES**

8 25. Lead Plaintiff, as set forth in the certification previously filed with the Court, purchased  
9 Origin's publicly traded securities during the Class Period and suffered damages as a result of  
10 Defendants' federal securities law violations.

11 26. Defendant Origin is incorporated under the laws of Delaware with its principal executive  
12 offices located in West Sacramento, California. At all relevant times, Origin's publicly traded securities  
13 was listed on the NASDAQ exchange in New York, NY under the symbol "ORGN."

14 27. Defendant Riley has served as the Company's Co-Chief Executive Officer ("CEO") at  
15 all relevant times. Defendant Riley signed the Company's Annual Report on Form 10-K for the year  
16 ended December 31, 2022 and Form 10-Q for the quarter ended March 31, 2023.

17 28. Defendant Bissell has served as the Company's Co-CEO at all relevant  
18 times. Defendant Bissell signed the Company's Annual Report on Form 10-K for the year ended  
19 December 31, 2022 and Form 10-Q for the quarter ended March 31, 2023.

20 29. Defendants Riley and Bissell (collectively, the "Individual Defendants"), by virtue of  
21 their high-level co-position as CEOs of Origin, possessed the power and authority to control the contents  
22 of the Company's reports filed with the SEC, and public statements, including Company-issued press  
23 releases and presentations to securities analysts, money and portfolio managers, and investors. The  
24 Individual Defendants were provided with copies of the Company's reports alleged herein to be  
25 misleading prior to, or shortly after, their issuance and had the ability and opportunity to prevent their  
26 issuance or cause them to be corrected, including to disclose all material information omitted from those  
27 disclosures, as alleged herein. Because of their positions and access to material, non-public information,  
28 each of the Individual Defendants knew that the adverse facts specified herein had not been disclosed

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1 to, and were being concealed from, the public, and that the positive representations being made were  
2 then materially false and/or misleading.

3 30. Defendant Origin and the Individual Defendants are collectively referred to as  
4 “Defendants.”

5 **IV. SUBSTANTIVE ALLEGATIONS**

6 **A. Origin’s Sustainable Materials Business**

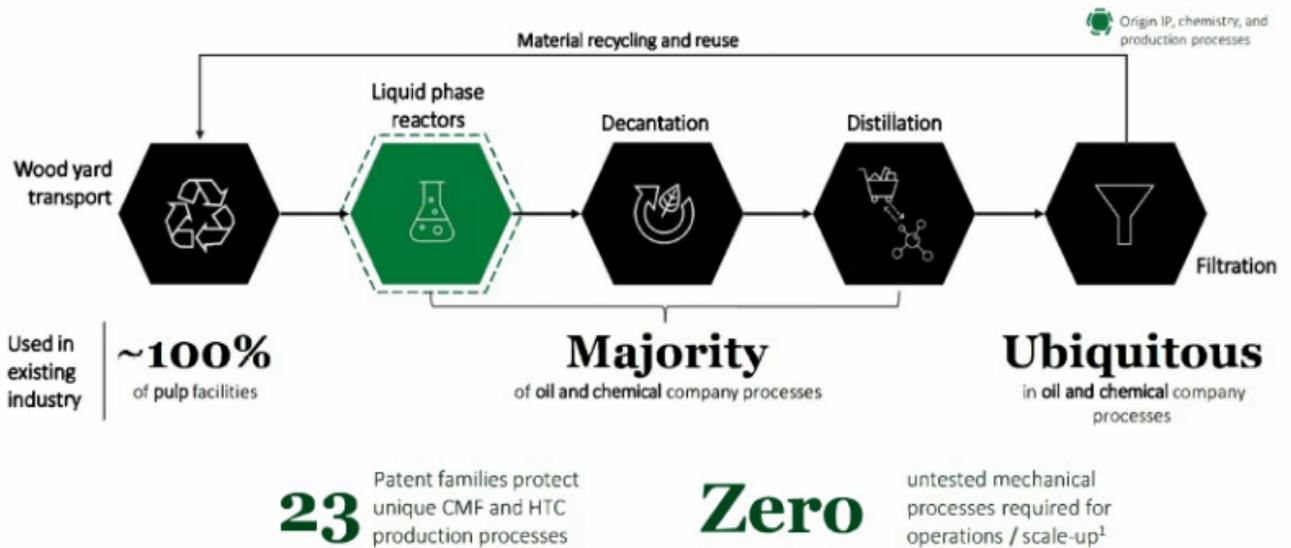
7 31. Origin was founded in November 2008, with operations in California and Ontario,  
8 Canada. Origin’s stated mission is to help enable the world’s transition to sustainable materials by  
9 replacing petroleum-based materials with decarbonized materials in a wide range of end products, such  
10 as food and beverage packaging, clothing, textiles, plastics, car parts, carpeting, tires, adhesives, and  
11 soil amendments.

12 32. Origin’s technology intends to convert sustainable feedstocks such as harvested wood,  
13 agricultural waste, wood waste and corrugated cardboard into materials and products that are currently  
14 made from fossil feedstocks such as petroleum and natural gas. These sustainable feedstocks do not  
15 compete with food production, which differentiates Origin’s technology from other sustainable materials  
16 companies that use feedstocks, such as vegetable oils or high fructose corn syrup and other sugars.

17 33. Origin claims to have developed a proprietary platform technology to convert biomass,  
18 or plant-based carbon, into CMF and hydrothermal carbon (HTC), as well as other versatile “building  
19 block” chemicals. Origin’s goal is to produce CMF and HTC with a negative carbon footprint at a  
20 commercial scale, claiming that these chemicals could replace petroleum-based counterparts, lowering  
21 the carbon footprint of a wide range of materials without sacrificing performance or cost.

22 34. As demonstrated below, Origin’s manufacturing process to produce carbon-negative  
23 CMF and HTC consists of front-end feedstock handling, and subsequent liquid phase reaction with  
24 Origin’s catalyst mixture, followed by downstream separation processes to separate and purify CMF,  
25 HTC, and other co-products:  
26  
27  
28

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



35. CMF is a chemically flexible intermediate that can be converted into a variety of products, including: (1) PX, a product that can replace non-sustainable chemicals in existing supply chains to produce PET; and (2) FDCA, which can be converted into PEF. PET’s applications include packaging, textiles, car parts, carpeting, toys, and construction materials, while FDCA and PEF’s include surfactants, epoxy resins, and packaging, with PEF having the potential to compete with glass and aluminum.

36. Fossil-based PET, produced from hydrocarbons, is one of the world’s most widely used and recycled plastics. Origin endeavors to produce PET using sustainable, recyclable, and cost competitive building block chemicals from plant-based carbon which are identical replacements for fossil-based PET.

37. Through the NaturALL Bottle Alliance research consortium, Origin has strategic relationships with three of the world’s largest buyers of PET—Nestlé S.A. (“Nestlé”), PepsiCo, Inc. (“Pepsi”), and Danone S.A. (“Danone”). As of 2021, combined these companies consume 4.75 million metric tons of plastic annually.

1 38. PEF (created from FDCA) is a potential alternative to PET (created from PX), including  
2 in small bottle applications, as they have similar properties. PEF requires less materials to achieve the  
3 same shelf life of PET and is biodegradable; however, cost has prevented the widespread adoption of  
4 PEF.

5 39. HTC is a diverse, high-potential carbon-negative material. Current applications of  
6 Origin's HTC include a drop-in, energy-dense solid fuel. HTC can also be calcined to produce a carbon-  
7 negative activated carbon for food and water treatment and filtration. Origin's HTC product  
8 development pipeline includes carbon black replacement for tires, foams and dyes, paint and coating  
9 applications, and agriculture and soil products. Origin claims that its carbon black has no detectable  
10 carcinogenic compounds, known as polyaromatic hydrocarbons, found in carbon black produced from  
11 fossil feedstocks.

12 **B. Origin Reveals Plans for Commercial Plants and Touts the Importance of Origin 2**

13 40. Origin first revealed its strategic near-term and long-term plans in an investor  
14 presentation that was attached to the Company's Form 8-K filed with the SEC on February 17, 2021, as  
15 well the Company's subsequent S-4 Registration Statement filed with the SEC on March 9, 2021, and  
16 amendments filed with SEC in conjunction with the Origin Merger on May 3, 2021.

17 41. Origin represented that it was undertaking two significant capital projects in the form of  
18 commercial-scale plants: "Origin 1" and "Origin 2." Origin 1 was supposed to be operational by the  
19 end of 2022 (and was under construction in Sania, Ontario, Canada); and Origin 2 was to be operational  
20 by mid-2025. A third plant, "Origin 3," was expected to be launched in 2027.

21 42. Origin's operating plan detailed that the Company would rely on the Origin 1 and Origin  
22 2 plants to meet customer demand until 2027. Origin 2 would supply most of the Company's products  
23 from 2025 through 2027.

24 43. Strategically, Origin 1 would serve and develop longer term focus markets that require  
25 Origin's customers to reformulate existing products and applications. While Origin 2 would supply  
26 Origin's near-term focus markets at scale. Origin 2 was considered the significantly larger  
27 manufacturing plant.  
28

1 44. The Company further represented that Origin 2 would cost \$1.07 billion. The Company  
2 did not expect to generate any revenue until 2023 or reach commercial scale production and positive  
3 EBITDA until 2025. The completion of Origin 2 was critical to Origin’s financial success and proof of  
4 large commercial production of its technology.

5 45. During a conference call on February 17, 2021, held in connection with the Origin  
6 Merger, Defendant Riley stressed the importance of Origin 2 for the Company:

7 After years of running our pilot plants, we are excited that our first large scale plant, Origin One,  
8 is under construction and anticipated to be operational by the end of 2022. Origin Two will be  
9 much larger than Origin One and our first commercial scale plant. It is expected to come online  
10 in 2025, and by 2028 we expect to have four plants supporting more than \$2 billion of annual  
11 revenue. In 2026, which is expected to be our first full year of full commercial scale operations  
12 we forecast revenue of \$830 million and EBITDA of \$296 million.

13 46. Defendant Riley added that “...the capital we are raising in this transaction is anticipated  
14 to fund our plan to finance the construction of Origin One and Origin Two and achieve EBITDA  
15 profitability.”

16 47. During the call, Defendant Bissell emphasized the importance of its largest buyers,  
17 including Pepsi, and clarified the focus of the Company’s production in the coming years would be on  
18 PET, a product derived from PX:

19 As previously highlighted, our current order book sits at approximately \$1 billion which includes  
20 take-or-pay contracts, capacity reservations or other contractual arrangements. Customers have  
21 already paid us large sums in advance, merely to reserve capacity on plants yet to be built... We  
22 have strategic relationships with three of the world’s largest buyers of plastic – Nestle, Danone  
23 and Pepsi, who are all investors in the company. These companies have rigorously tested our  
24 technology and produced bottles using our materials, ensuring that Origin can meet their high  
25 standards. Notably, all three have signed offtake agreements worth several hundred million  
26 dollars and have representatives on our Board. To further size the opportunity, meeting the  
27 annual needs of these three companies alone could require more than 20 commercial facilities,  
28 representing a massive revenue opportunity.

\* \* \*

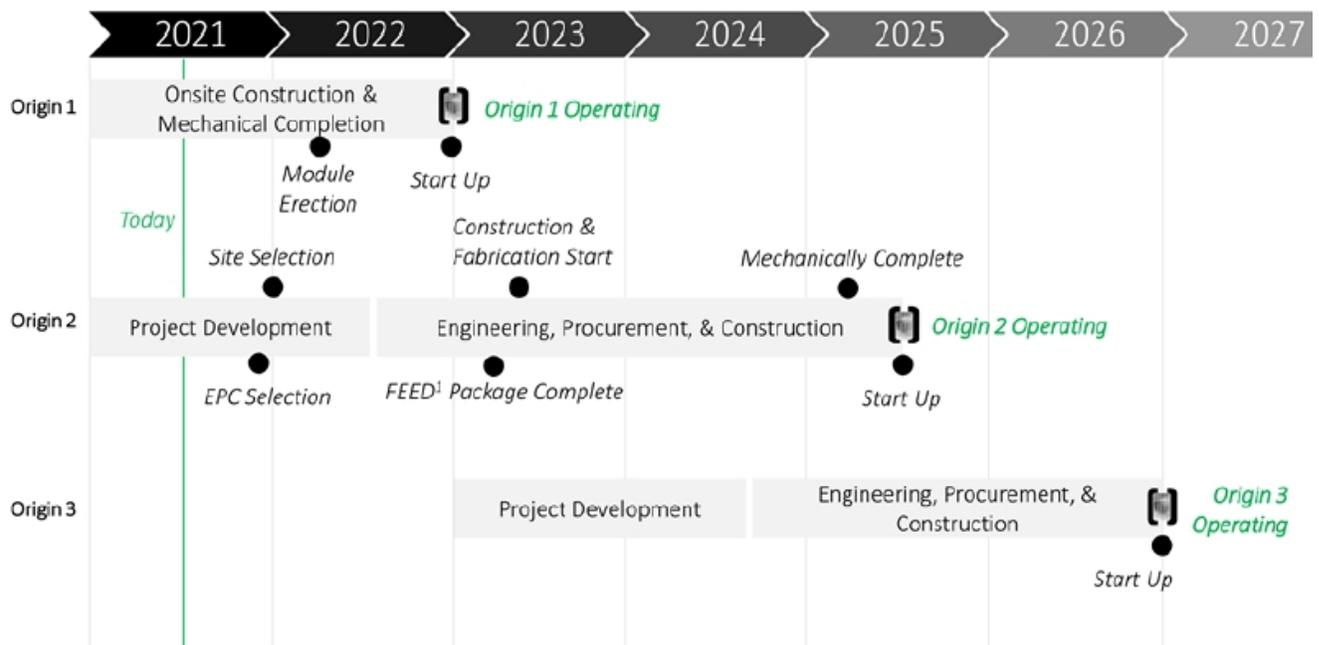
While the flexibility of our platform enables us to address an incredibly wide range of materials,  
***the product that we will make from CMF initially is PET. PET is a very widely used material  
due to its beneficial properties, and importantly is the polymer with the largest and most  
established recycling infrastructure. Origin is the only company that can make PET that is  
chemically identical using a carbon negative process—not by buying offsets.***

(Emphasis added).

**C. Origin Provides Details on the Planning, Engineering, and Construction of Origin 2**

48. In an analyst day presentation filed with the SEC on April 19, 2021 (the “April 19, 2021 Analyst Presentation”), Origin provided the following diagram detailing the schedule for Origin 2’s project development, engineering, procurement and construction, and front-end engineering design (FEED):

**Construction schedule – Origin 1, Origin 2, and Origin 3**



49. Origin 2’s purported schedule was repeatedly disseminated by Defendants in 2021 and 2022 and throughout the Class Period.

50. Project development for Origin 2 had to be completed before FEED could be completed; and FEED had to be completed before the construction of Origin 2 could begin.

51. In the complex world of chemical, oil & gas, and petrochemical plant development, front-end loading (FEL) plays a critical role in laying the foundation for project success. This multi-phased process involves progressively refining the project scope, definition, and feasibility, ultimately

1 paving the way for detailed engineering and construction. The FEL definitions provided herein are used  
2 by engineers when planning a project such as Origin 2. *See The Complete Guide To FID's*, MARKETS  
3 INSIDER (businessinsider.com) (Feb. 23, 2020), [https://markets.businessinsider.com/news/stocks/the-](https://markets.businessinsider.com/news/stocks/the-complete-guide-to-fids-1028929515)  
4 [complete-guide-to-fids-1028929515](https://markets.businessinsider.com/news/stocks/the-complete-guide-to-fids-1028929515); *Front End Engineering Design: A closer look to FEL 1, 2, and 3*  
5 *deliverables*, quantaprocess.com (Dec. 16, 2023), [https://www.quantaprocess.com/front-end-](https://www.quantaprocess.com/front-end-engineering-design-a-closer-look-to-fel-1-2-and-3-deliverables/)  
6 [engineering-design-a-closer-look-to-fel-1-2-and-3-deliverables/](https://www.quantaprocess.com/front-end-engineering-design-a-closer-look-to-fel-1-2-and-3-deliverables/).

7 52. FEL is a structured approach to project development divided into three distinct stages:  
8 FEL 1, FEL 2, and FEL 3. Each stage delivers progressively more detailed information and serves as a  
9 decision-making point for project stakeholders. Origin issued project timelines to investors showing it  
10 utilized the FEL approach for developing Origin 2.

11 53. FEL 1 generally focuses on establishing project feasibility and providing a high-level  
12 overview of its technical and economic viability, including: defining the key process steps, flow  
13 diagrams, and mass and energy balances; developing a conceptual site layout and equipment  
14 arrangement; identifying the major equipment required for the project; estimating the project's capital  
15 and operating costs; creating a preliminary timeline for project execution; and identifying potential risks  
16 and mitigation strategies.

17 54. FEL 1 is the phase in which a project idea and its initial concept are tested for feasibility.  
18 The project idea begins with identification of resources, how much (roughly) the project will cost, and  
19 where the money to finance it will come from.

20 55. FEL 2, or pre-FEED study, builds upon the foundation established in FEL 1, and dives  
21 deeper into defining the project scope and technical specifications, including: creating detailed process  
22 diagrams and specifying instrumentation requirements; refining the process design using sophisticated  
23 simulation software; developing detailed specifications for major and minor equipment; completing a  
24 preliminary piping layout and estimating materials; developing preliminary designs for civil and  
25 structural elements; refining the electrical and instrumentation systems design; updating the cost  
26 estimate with greater accuracy; defining the project schedule with a more realistic timeline; and  
27 conducting a more -in-depth risk assessment and developing mitigation plan.

1           56.     FEL 3 or the FEED study represents the final and most comprehensive stage of the FEL  
2 process. It focuses on finalizing the project design and preparing a comprehensive set of documents for  
3 bidding and construction. This stage typically includes: finalizing all process-related drawings,  
4 specifications, and data sheets; completing all piping drawings, specifications, and isometric drawings;  
5 finalizing all civil and structural drawings and specifications; finalizing all electrical and instrumentation  
6 drawings and specifications; listing all materials required for construction; developing a comprehensive  
7 bid package for contractors; refining the cost estimate with a high degree of accuracy; and finalizing the  
8 project schedule with a detailed breakdown of activities.

9           57.     The FEED examines the technical requirements and provides a rough estimate of the  
10 overall project costs and the costs of each phase. In the FEED stage, project partners work to ensure  
11 that they have addressed any potential risks to the project and that the work on FEED will have extensive  
12 analysis and detailed data and information that will inform the project's final investment decision (FID).  
13 In the FEED phase, project owners and operators communicate with the engineering contractor to decide  
14 which technical and engineering options are the best to use in the project.

15           58.     Once a company, such as Origin, successfully completes FEED, it can then make the  
16 FID. FID is the point in a project in which a company approves or sanctions a project's future  
17 development. When a company has taken or made a FID, it has approved the project to go ahead, and  
18 the construction process can begin.

19           59.     In 2021, Origin was in the process of executing FEL 1 for Origin 2 and had hired an  
20 engineering firm to assist with the phase in November 2021. While the Company had completed certain  
21 aspects, such as a project schedule and cost estimate, numerous other aspects of FEL 1 still needed to  
22 be completed.

23           **D.     Origin Confirms and Promotes Origin 2's Focus on Producing PET**

24           60.     In addition to detailing the schedule for Origin 2, Origin's April 19, 2021 Analyst  
25 Presentation represented that the focus of production for Origin 2 would be PET and HTC fuel:  
26  
27  
28

## Long-term target operating model

	Origin Plant 1		Origin Plant 2		Origin Plant 3-7 Average	
<u>Illustrative Run-Rate Economics</u>						
Mn lb. biomass input	49		2,205		2,205	
Mn lb. products sold	146		2,412		1,313	
CapEx (\$Mn)	\$70 <sup>1</sup>		\$1,072		\$811	
ROIC (Adj. plant margin/CapEx)	NM		35.9%		51.1%	
	\$Mn	\$/lb. product	\$Mn	\$/lb. product	\$Mn	\$/lb. product
Revenue	\$122	\$0.84	\$708	\$0.29	\$637	\$0.49
Consumer materials			\$414		\$291	
Industrial materials	\$122		\$294		\$346	
Biomass feedstock	(\$7)	(\$0.05)	(\$56)	(\$0.02)	(\$56)	(\$0.04)
Other feedstock & variable costs	(\$7)	(\$0.05)	(\$93)	(\$0.04)	(\$108)	(\$0.08)
Tolling & downstream processing	(\$106)	(\$0.73)	(\$154)	(\$0.06)	(\$39)	(\$0.03)
Adj. Contribution <sup>2</sup>	\$2	\$0.01	\$405	\$0.17	\$435	\$0.33
Plant labor + other fixed costs	(\$6)	(\$0.04)	(\$20)	(\$0.01)	(\$20)	(\$0.02)
Adj. Plant Profit	(\$4)	(\$0.03)	\$385	\$0.16	\$415	\$0.32
Primary Products	PET/F, CMF, higher value application development samples		PET, HTC fuel		PET, PET/F, PEF, CMF, FDCA, carbon black, activated carbon, HTC fuel	

61. Origin touted its decision to focus on PET in numerous public statements prior to August 9, 2023.

62. For example, on May 25, 2021, Defendant Bissell stressed the benefits of PET:

The reason why we went after PET first is, we're really solving the front end, which is when you make materials, you emit carbon. We thought if we can bring our platform to PET, you can take PET and you can make it so that it's carbon negative, instead of emitting carbon when it's produced, but there's the end-of-life consideration as well for all materials, not just plastics.

\* \* \*

The reason why we went for PET is because PET has by far the best end of life answer for, frankly, I would say commodity materials generally, not even just plastics, and PET is substantially recycled. It's a great sort of material from a property perspective, so it has a strong desire for use as well. Our material drops directly into the PET recycling stream, so it goes straight in, it's the same stuff. You make it, and it's low carbon or carbon negative on the front end, and then it gets recycled and continues to be recycled.

1           63. Defendant Bissell later hyped the limitless scope of PET adding, “[e]ven just for PET,  
2 the market is so large that you’re not even talking about dozens of plants. You’re talking about scores,  
3 hundreds, in theory, of plants that are required, even at these very large scales in order to address these  
4 markets falling over time.”

5           64. In an article by Rebecca Coons for *Chemical Week*, titled “Origin Materials bets on  
6 decarbonization” that was filed with the SEC on form 425 on June 10, 2021, Defendant Bissell again  
7 confirmed that Origin was prioritizing PET in the near-term, because there was no market risk and,  
8 “[c]ustomers can use it in their existing supply chain, they don’t have to redesign anything or retool  
9 anything.” Bissell added “[t]hat means that we don’t have to worry about adoption cycles.”

10           65. The article further discussed the market dynamics of PET:

11           Entering the market with PET—a high-volume, low-margin product—runs counter to many  
12 strategies in the biobased chemicals. “The question there is really one of economics right?”  
13 Bissell says. “If you have a really low-cost platform, which we do, we get plenty of margin going  
14 after a large market like PET. And, let[’s] be realistic: if your goal is to make an impact—because  
15 at the end of the day we are focused on making an impact, not just building an attractive  
16 business—picking a target that is 0.1% of the global materials market by volume...is not going  
17 make a massive difference.”

18           66. During the Class Period, Defendants continued to tout the production of PX and PET.  
19 For example, on February 23, 2023, Defendants represented to the market that “due to strong customer  
20 demand,” Origin was “substantially committed for our Origin 2 paraxylene and PET capacity.”

21           67. Similarly, on May 10, 2023, Defendants affirmed that PET derived from PX, was the  
22 “flagship” product for Origin 2 and touted the Company’s process for producing a “next-generation  
23 PET.”

24           68. On June 8, 2023, Defendants repeated that PET derived from PX was the “flagship”  
25 product for Origin 2 and further emphasized in their June 8, 2023 representations that the Company’s  
26 decision to focus on PET derived from PX “was very intentional” because “it’s one of the best polymers  
27 out there. . . .”  
28



1           74.     Similarly, in a February 24, 2022 press release attached to a Form 8-K filed with the SEC  
2 announcing the Company’s financial results for the fourth quarter of 2021, Defendant Riley stated that  
3 “Origin 2 remains on track to be operational by mid-2025. We announced that we have selected  
4 Geismar, Louisiana for Origin 2’s location, subject to finalization of economic incentives, and are  
5 announcing today the selection of Hunt, Guillot & Associates as the project’s owner’s engineer.”

6           75.     During an earnings call held that same day, Defendant Bissell reiterated that Origin 2  
7 “remains on track to be mechanically complete and operational in mid-2025. Origin 2 will produce  
8 carbon negative materials used to make PET plastic.” He later added that Origin 2’s “[f]ront end design  
9 is well underway and Origin expected detailed venture to begin in 2023.”

10          76.     In connection with the Company’s earnings report for the fourth quarter of 2021, Origin  
11 disseminated a PowerPoint presentation on its website which described Origin 2’s expected capacity:  
12 “[t]he plant is expected to convert an estimated 1 million dry metric tons of sustainable wood residues  
13 each year into carbon-negative materials used to make PET and HTC for a wide variety of end markets.”

14          77.     Similarly, during Origin’s May 9, 2022 earnings call for the first quarter of 2022,  
15 Defendant Bissell stated: “[w]ith regard to Origin 2, our previously disclosed capital budget and  
16 construction time line are unchanged. To be clear, we do see the inflationary environment and continue  
17 to closely monitor costs, but we are proactively managing our cost base and have built in substantial  
18 contingencies into our initial projections.”

19          78.     During the call, in response to an analyst question concerning Origin 2’s engineering and  
20 planning phases, Defendant Bissell stated:

21                   And then for Origin 2, we’re in the front end engineering process right now. We’re looking to  
22 have that process complete next year. At that point, once you have that, you can sort of bid out  
23 that the engineering package from the feed package from that process to get fixed pricing for it  
24 from EPCs. And then we can pull together the massive stack of contracts that we’ve put together.  
And then of course, feedstock supply agreements, all together into the project financing.

25          79.     Similarly, during Origin’s August 3, 2022 earnings call for the second quarter for 2022,  
26 Defendant Bissell represented that: “[w]ith regard to Origin 2, our previously disclosed capital budget,  
27 construction time line and financing are unchanged. As discussed on prior calls, we are closely  
28 monitoring costs associated with the current high levels of inflation and the challenging supply chain

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1 environment. We continue to proactively manage our cost base and note that we have built appropriate  
2 contingencies into our initial projection.”

3 80. Defendant Riley made similar statements during the Company’s November 3, 2022  
4 earnings call for the third quarter of 2022, representing that: “[f]or Origin 2, the previously disclosed  
5 capital budget construction timeline and financing assumptions are unchanged.”

6 81. During that same call, Defendant Bissell added that while Origin 2 had progressed to the  
7 FEL 2 phase of development, Origin needed more time than originally budgeted for value engineering  
8 to optimize the scope of the plant:

9 ...The team is optimizing and refining the scope and layout of the plant, incorporating value  
10 engineering activities. We are producing updated equipment arrangements and flow diagrams  
11 through our FEL2 engineering contractor. While we had hoped to complete these tasks by the  
12 end of Q3, we decided that it was more important to expand on the value engineering work to  
get it done correctly upfront.

13 82. Origin disseminated PowerPoint presentations on its website in conjunction with each of  
14 the Company’s earnings reports from November 2021 through November 2022, as well as during the  
15 Class Period on February 23, 2023, March 7, 2023, and May 10, 2023. Each of these PowerPoint  
16 presentations affirmed that FEED for Origin 2 would be completed in early 2023, construction would  
17 start by mid-2023, and start-up in mid-2025.

18 **F. Defendants Knew that Fouling Issues Were Delaying the Completion of Origin 2**  
19 **and Would Result in a Product Shift Away from PX**

20 83. Unbeknownst to investors, Defendants knew prior to, and throughout the Class Period,  
21 that Origin was experiencing fouling issues that prevented the Company from finalizing the chemistry  
22 for Origin 2 with respect to PX, resulting in the Company being unable to move forward with the  
23 construction of Origin 2.

24 84. A former Origin employee referred to herein as “CW1,” reported that by the end of  
25 2022/early-2023, Defendants knew that Origin was experiencing problems in connection with the  
26 development of Origin 2, both with respect to the construction of the plant and with producing its target  
27 product, PX.  
28

1 85. CW1 was a technical development engineer who was employed at Origin prior to and  
2 throughout the Class Period. CW1 worked on developing the technology for the fourth stage of  
3 converting CMF to PX for Origin 2. CW1 was part of an internal engineering group responsible for  
4 compiling chemistry data provided by the Company's Research and Development ("R&D") group and  
5 then rerouting the information to Origin 1 to test those findings on a larger scale. If such tests were  
6 successful, CW1 and the internal engineering team would then pass along the data to the outside  
7 engineering firm compiling FEL 2 for Origin 2.

8 86. Prior to the Class Period, in late 2022, CW1 learned from attending biweekly meetings  
9 with Origin's R&D group that fouling issues were occurring at every step of the Company's conversion  
10 from CMF to PX at commercial scale. These fouling issues resulted in the Company being unable to  
11 finalize the chemistry for Origin 2, which meant that the Company could not move forward with building  
12 the plant. Because of the fouling issues, CW1 and his team were falling behind in providing critical  
13 engineering data/designs to Origin 2's outside engineering firm, which caused the Company to fall  
14 behind in completing FEL 2 for Origin 2.

15 87. In December of 2022, CW1 attended a quarterly all-hands Company meeting, which was  
16 helmed by Defendants Riley and Bissell. During this meeting, Defendants Riley and Bissell discussed  
17 the state of the Company, the research and development process at Origin 2, and provided an update on  
18 the plant—such as how the plant would look. According to CW1, Defendants Riley and Bissell revealed  
19 that the Company was already considering scaling down the size of Origin 2, splitting the building of  
20 the plant into two phases, and shifting the focus of Origin 2 from PX to another product. Defendants  
21 Riley and Bissell further stated that the Company would either have to make less PX at the plant or pivot  
22 the production to another product due to the economics of PX. At the meeting, CW1 was instructed that  
23 the Company was far off from completing FEL 2 for Origin 2.

24 88. In early 2023, CW1 learned from his biweekly meetings with Origin's R&D group that  
25 the Company faced unexpected chemical issues necessary for scaling commercial PX. The engineers  
26 started developing solutions for the issues, but it took more time, slowed down engineering designs, and  
27 increased costs, which all factored into shifting the plant's focus away from PX and scaling Origin 2  
28 into two phases.

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1 89. CW1 stated that he was aware of management's shift in the Origin 2 timeline before May  
2 2023 because management was slowing down PX development for the plant. As explained by CW1,  
3 technology maturity was the biggest issue for completing Origin 2. CW1 initially thought the extended  
4 timeline for Origin 2 was good in a sense because it gave them more time to work on the technical  
5 problems they were experiencing.

6 90. CW1 stated that he attended weekly meetings, which were held by video conference, on  
7 Fridays, between 9am and 10am PST with Bissell and others. The meetings generally lasted an hour or  
8 more. The moderator would start the meeting with a safety moment, introduce new employees, and then  
9 the meeting would proceed. Bissell was usually one of the later people to speak. The moderator would  
10 introduce Bissell and the topics Bissell planned to discuss. CW1 recalled that Bissell would often lead  
11 discussions and also introduced other speakers. CW1 stated that Bissell was a "huge contributor" to the  
12 weekly meeting and "was in charge."

13 91. During the March 3, 2023 meeting, CW1 heard Bissell discuss how Origin 2 would now  
14 be broken up into two phases, was shifting to new products, and would no longer produce PX. This was  
15 communicated by Bissell to all participants at that meeting. CW1 recalled Bissell explaining the changes  
16 by saying things like: PX is not performing strongly, the cost of the plant is very high, and we need to  
17 get the company net positive. Accordingly, Bissell told the group, "we are going to move in this new  
18 direction." Bissell was the first person that CW1 heard reveal that the Company would not produce PX  
19 at Origin 2.

20 92. CW1 stated that at the March 3, 2023 meeting, Bissell presented a detailed plan of action  
21 to move forward with the changes at Origin 2 away from PX production and the changes to plant  
22 construction. CW1 stated that since a plan of action to move forward with the changes at Origin 2 were  
23 already formulated and communicated to the group during the March 3, 2023 meeting, Bissell must have  
24 known well before March 3, 2023 that Origin 2 would not produce PX in order for Bissell and  
25 management to have time to come up with the change in plan. CW1 stated that the plan announced on  
26 March 3, 2023 was likely formulated months in advance because it was well thought out by the time it  
27 was conveyed by Bissell to CW1 and others at the March 3, 2023 meeting.

1 93. CW1 recalled that toward the end of March 2023, there were email communications in  
2 his group discussing that FEL 2 was delayed for Origin 2. CW1 stated that the late March 2023 emails  
3 reiterated what Bissell told the group at the weekly meetings, where Bissell discussed Origin 2's  
4 production changes away from PX, construction delays, and FEL2 delays.

5 **G. Origin's Offtake Agreements Further Evidence Defendants' Knowledge of Origin**  
6 **2's Delay and Product Shift**

7 94. Consistent with the CW1's account set forth above, Origin's partnership, technology  
8 licensing and offtake agreement with Avantium, as well as amendments made to an offtake agreement  
9 with Pepsi during the Class Period, evidence Defendants' knowledge that Origin was experiencing  
10 technical issues with respect to scaling the production of PX that were preventing the Company's  
11 commercial production of PX, resulting in scheduling delays for Origin 2, and causing the Company to  
12 pivot the plant's focus to the production of FDCA.

13 **1. Origin's Partnership with Avantium**

14 95. According to CW1, Defendants knew by early 2023, that Origin was experiencing  
15 fouling issues that prevented the Company from finalizing the chemistry for Origin 2 with respect to  
16 PX, resulting in the Company being unable to move forward with the construction of Origin 2. Because  
17 of these technical issues, Origin needed to explore alternatives to PX for Origin 2.

18 96. Immediately prior to the Class Period, on February 21, 2023, while Origin was  
19 representing to the market that Origin 2's primary product focus would be PX, Origin entered into a  
20 partnership agreement with Avantium to accelerate the production of FDCA, the key building block of  
21 PEF, by converting sustainable wood residues via CMF into FDCA on an industrial scale.

22 97. Avantium is a technology development company specializing in renewable chemistry  
23 that is publicly traded on Euronext Amsterdam and Euronext Brussels (symbol: AVTX). In December  
24 2021, Avantium announced it made its FID on its flagship plant, the world's first factory to produce  
25 FDCA on a commercial scale.

26 98. Origin's partnership with Avantium included a non-exclusive license agreement,  
27 providing Origin access to relevant parts of Avantium's process technology which would enable the  
28 conversion of Origin-produced CMF derivatives into FDCA at a 100 kiloton per year scale facility

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1 operated by Origin. The agreement also granted Origin a license to use certain parts of Avantium's  
2 YXY® process for the purpose of: (1) designing, constructing, and operating the licensed facility; and  
3 (2) producing, using, selling, and converting FDCA manufactured at that facility.

4 99. Defendants knew pivoting to the production of FDCA from PX required Avantium's  
5 technology and assistance, as explained by Avantium's CEO on a conference call with analysts on  
6 February 22, 2023:

7 ... The license agreement provides Origin access to relevant parts of Avantium's process  
8 technology to enable the conversion of CMF into FDCA at a facility of 100 kiloton per annum  
9 scale...*Avantium will provide Origin Material for instance with a Process Design Package*  
10 *(PDP) and an operating manual. Avantium will also support Origin Materials during the*  
11 *FEED- (front-end engineering design) and EPC- (engineering, procurement and*  
12 *construction) phases, as well as the commissioning and start-up of the licensed facility.* With  
this, Origin can design, construct and operate a 100 kiloton licensed facility and produce, use,  
sell FDCA that is manufactured at that facility...

13 (Emphasis added). See, [www.avantium.com/wp-content/uploads/2023/03/20230222-Transcript-](http://www.avantium.com/wp-content/uploads/2023/03/20230222-Transcript-Analyst-Call-Partnership-announcement-Origin-Materials.pdf)  
14 [Analyst-Call-Partnership-announcement-Origin-Materials.pdf](http://www.avantium.com/wp-content/uploads/2023/03/20230222-Transcript-Analyst-Call-Partnership-announcement-Origin-Materials.pdf).

15 100. Avantium's CEO, who had the most experience developing FDCA plants in the world,  
16 stated during the February 22, 2023 call that it would take Origin *several years* to implement FDCA  
17 into its Origin 2 plant design:

18 **Tom van Aken (CEO Avantium):**

19 ...Let me go to the first question; basically what Origin has done so far, they have constructed  
20 what they call OM1, that is a plant that they are building in Sarnia in Canada. *That has a capacity*  
21 *of 25kt that is input or feedstock and the output is 5kt of CMF but that is not sufficient to feed*  
22 *into the license facility that they intend to build with using our YXY technology. So that is*  
*material that will come from future plants.*

23 **Fernand de Boer:**

24 When is the OM 2 coming into production then?

25 **Tom van Aken (CEO Avantium):**

26 That facility is going to be built in Geismar in Louisiana, and we have to be careful with what  
27 we are saying on behalf of Origin, *so it's up to Origin to make announcement regarding the*  
28 *timing of OM2 and of the licensed facility. That is not something that we comment on. Of*

1 *course, we have our own experience with this how long these things take, so this is not*  
2 *something that is going to happen over the next few years, but this is probably going to take a*  
3 *bit longer, but that is up to them to make further announcements on...*

4 (Emphasis added).

5 **2. Origin's Amendments to its Offtake Agreement with Pepsi**

6 101. On May 9, 2023, the Company and Pepsi finalized amendments to an offtake agreement  
7 between the companies (the "Pepsi Offtake Agreement Amendments"). The amendments substantially  
8 modified the original agreement which was memorialized in 2018 (the "Original Pepsi Offtake  
9 Agreement").

10 102. The Original Pepsi Offtake Agreement provided Pepsi with a 5-year term to purchase a  
11 specified amount of product per year from the Origin 1 facility, and an additional 5-year term to purchase  
12 a specified amount of product per year from the "New Plant." See Origin Form S-4 Registration  
13 Statement dated May 3, 2021 at p. 190. The agreement further delineated that the "New Plant" (or  
14 Origin 2 as later clarified) would be constructed to produce PX.

15 103. The Original Pepsi Offtake Agreement allowed Pepsi the right to terminate the agreement  
16 if Origin 2's commercial operation did not occur by June 30, 2025 (the same "mid-2025" timeline that  
17 the Company repeatedly provided the market before and during the Class Period), or if PX was not  
18 delivered from Origin 2 to Pepsi by September 30, 2025. Further, Origin was obligated to keep Pepsi  
19 "regularly informed" about the progress made and any material events in relation to the construction of  
20 Origin 2 through regular progress reports.

21 104. The Original Pepsi Offtake Agreement mandated that if Origin obtained actual  
22 knowledge that there existed a substantial likelihood that Origin 2's milestone dates in 2025 may not be  
23 met, Origin was required to promptly notify Pepsi and provide Pepsi with a reasonable estimate of the  
24 new expected timeline as well as the measures being taken by Origin to ensure the plant would meet  
25 its contractual timelines. In such an instance, Pepsi had the option to terminate the agreement, or the  
26 agreement would terminate automatically on June 30, 2025, unless the companies reached a new  
27 understanding in writing as to Origin 2.  
28

1 105. The May 9, 2023 Pepsi Offtake Agreement Amendments revised Pepsi's right to  
2 terminate the agreement if commercial operation had not occurred at Origin 2 by June 30, 2026 and  
3 allowed termination if product was not delivered from Origin 2 to Pepsi by December 31, 2026.

4 106. The Pepsi Offtake Agreement Amendments also permitted Origin to provide Pepsi with  
5 FDCA from Origin 2, whereas the Original Pepsi Offtake Agreement only permitted Origin to provide  
6 Pepsi with PX from Origin 2.

7 107. The Pepsi Offtake Agreement Amendments also included new recitals and provisions  
8 which further evidence Defendants' knowledge that the Company was now prioritizing the production  
9 of FDCA and PEF at Origin 2:

10 **WHEREAS**, Supplier is focused on carrying out its strategic plan to accelerate the production  
11 of FDCA and PEF for advanced chemicals and plastics and accordingly is contemplating  
12 producing, or having produced, FDCA from intermediates produced at New Plant [(Origin 2)]  
13 and/or its subsequent plant, Origin 3.

14 108. The Pepsi Offtake Agreement Amendments further set forth the following provisions in  
15 connection with Origin 2: (i) the Company would provide Pepsi with pricing calculations and technical  
16 specifications for FDCA before or by the completion of the plant's FID, which the amendments  
17 recognized was incomplete and required approval by Origin's board of directors before engineering,  
18 procurement and construction could begin; (ii) upon completing FID, the Company would then provide  
19 Pepsi with an updated estimate on the specific allocation between PX *and* FDCA that the plant could  
20 produce on an aggregate and annual basis ("Origin 2's Offtake Volume"); (iii) Pepsi and Origin would  
21 meet at least quarterly, unless otherwise mutually agreed by the companies, to review Origin's progress  
22 and the steps the Company was taking to ensure Origin 2 was operational and delivering product by the  
23 new 2026 deadlines; and (iv) Origin was no longer required to produce PX at the plant.

24 109. Origin's Form 10-Q for the first quarter of 2023, filed with SEC on May 10, 2023, (the  
25 "1Q'23 Form 10-Q"), summarized the Pepsi Offtake Agreement Amendments as follows:

26 On May 9, 2023, the Company amended its Offtake Agreement with a customer. The amendment  
27 added FDCA as a product potentially available to be supplied to the customer under the Offtake  
28 Agreement and eliminated the customer's obligation to buy and the Company's obligation to sell  
a specified annual amount of product from the Origin 1 facility while adding the planned Origin  
3 facility as a potential source of product to be supplied to the customer. The amendment also

1 made the customer's obligation to buy and the Company's obligation to sell a specified annual  
2 amount of product from the Origin 2 facility non-binding unless and until the Company accepts  
3 a purchase order from the customer. In addition, the amendment eliminated certain construction  
4 and delivery milestones associated with the Origin 1 facility, along with the penalties applicable  
5 in the event those milestones were not met, *and updated the construction and delivery  
6 milestones associated with the Origin 2 facility.*

7 \* \* \*

8 On May 9, 2023, the Company amended its offtake agreement with a customer to, among other  
9 things, eliminate certain construction and delivery milestones associated with the Origin 1  
10 facility, along with the penalties applicable in the event those milestones were not met, including  
11 the right to terminate noted above. *The amendment also updated the construction and delivery  
12 milestones associated with the Origin 2 facility such that the agreement now is terminable if  
13 commercial operation of Origin 2 has not occurred before June 30, 2026 or if delivery of  
14 product from Origin 2 has not occurred before December 31, 2026.*

15 (Emphasis added).

16 110. Thus, Defendants knew by May 9, 2023 that Origin 2's schedule was delayed and the  
17 plant's completion and PX-delivery milestones set for mid-2025 and late-2025, respectively, would not  
18 be met. Pursuant to Origin's agreement with Pepsi (one of the Company's most important investors and  
19 customers and which had a senior price president serve as a member of Origin's Board of Directors),  
20 Origin notified Pepsi of the expected delay and amended the agreement to reflect a new timeline and  
21 product-focus for Origin 2, while continuing to represent to the market that the plant's main product  
22 focus would be PX, that front-end design and construction planning were "progressing," that  
23 construction would start by mid-2023, and that Origin 2 would be operational in mid-2025.

24 **H. Defendants Finally Admit That Origin Was Not Constructing a PX/PET Plant and  
25 Would Not Start Up a New Origin 2 FDCA/PEF Plant Until 2028**

26 111. Despite knowing that Origin was unable to effectively scale the production of PX at Origin  
27 2, which had caused delays and a total production realignment, Defendants repeatedly assured investors  
28 throughout the Class Period that Origin 2's operations date was on schedule for mid-2025 and would  
produce PX/PET.

112. On August 9, 2023, Defendants finally revealed what had been known internally  
throughout the Class Period, that Origin 2 would no longer produce PX/PET, which was replaced by  
FDCA/PEF, and that it was impossible to design, construct, and start-up a new FDCA/PEF plant in

1 mid-2025. Accordingly, Origin 2's construction was delayed until at least 2025, and the earliest that  
2 certain aspects of the plant could be operational was delayed to sometime between late-2026 and 2027.

3 113. Defendant Bissell also admitted on the earnings call held on August 9, 2023, that once  
4 the Company decided to take Origin 2 in a new direction and focus on FDCA, the Company then needed  
5 to spend "thousands of hours" to turn a new engineering assessment and compile a revised estimate on  
6 the plant's cost and schedule, which played a "meaningful" role in delaying the plant's timing. Since  
7 Defendants made the decision to shift Origin 2 to new products and no longer produce PX in March  
8 2023, the completion of FEL 2 was delayed and Defendants knew that extensive engineering work was  
9 needed before the Company could provide a revised estimate on Origin 2's schedule.

10 114. The shift in production focus from PX to FDCA had such a dramatic effect on the plant's  
11 original timeline that FDCA will not be produced at the plant until 2028, a delay of almost three years.

12 **V. DEFENDANTS' MATERIALLY FALSE AND MISLEADING STATEMENTS AND**  
13 **OMISSIONS**

14 **A. February 23, 2023 False and Misleading Statements**

15 115. On February 23, 2023, Origin filed a Form 8-K with the SEC which attached a press  
16 release announcing the Company's financial results for the fourth quarter of 2022 and for the year ended  
17 December 31, 2022 (the "February 23, 2023 Press Release"). The press release also reported on the  
18 purported progress of Origin 2 and the possibility of incorporating new products for development in  
19 Origin 2, in addition to PX:

20 *The Company continues to make progress on front-end design, construction planning, and*  
21 *financing for Origin 2. The Company has also made progress developing new products and*  
22 *applications which may be incorporated into the design of the plant, such as FDCA, PEF, as*  
23 *well as biofuels from an "oils and extractives" stream co-produced alongside CMF and HTC,*  
24 *which has not been included in previous plans. The Company expects to provide an update on*  
*new product offerings and construction plans for the Origin 2 plant in mid-2023.*

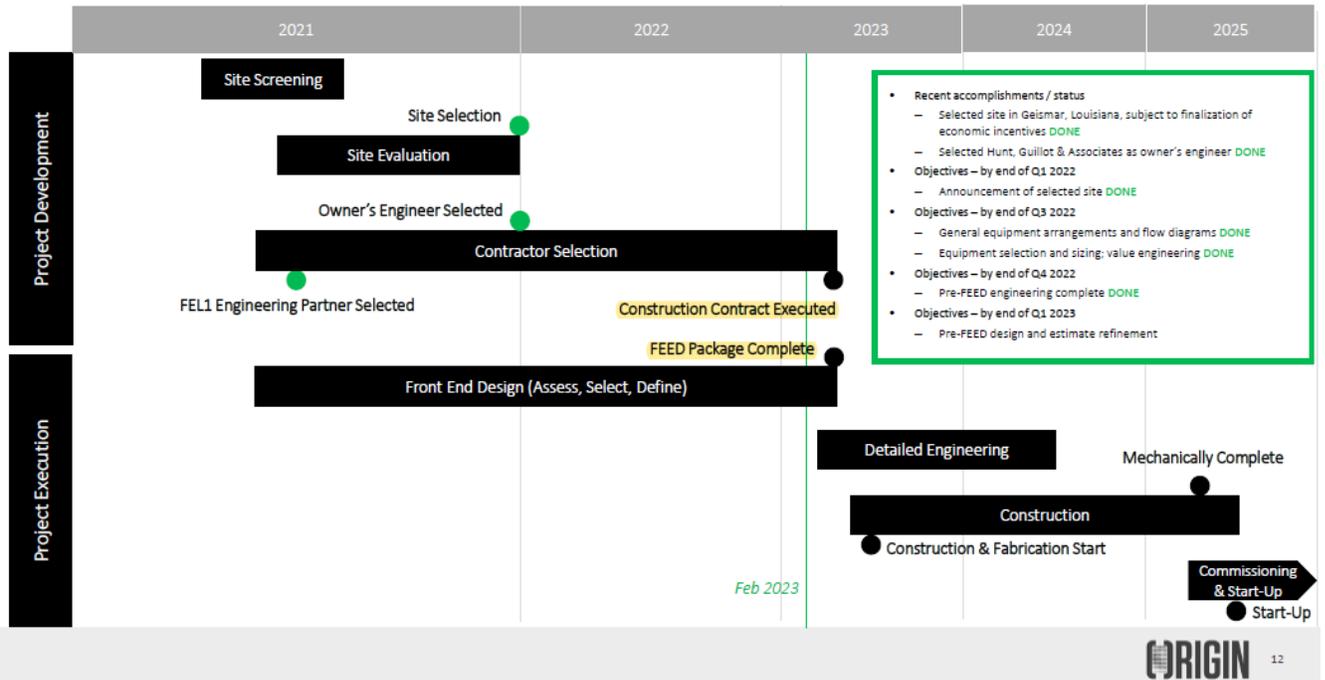
25 (Emphasis added).

26 116. Defendant Riley similarly represented that Origin 2 was progressing, stating that: "[F]or  
27 Origin 2, front-end loading, construction planning, and financing are progressing with an update to be  
28 provided mid-2023."



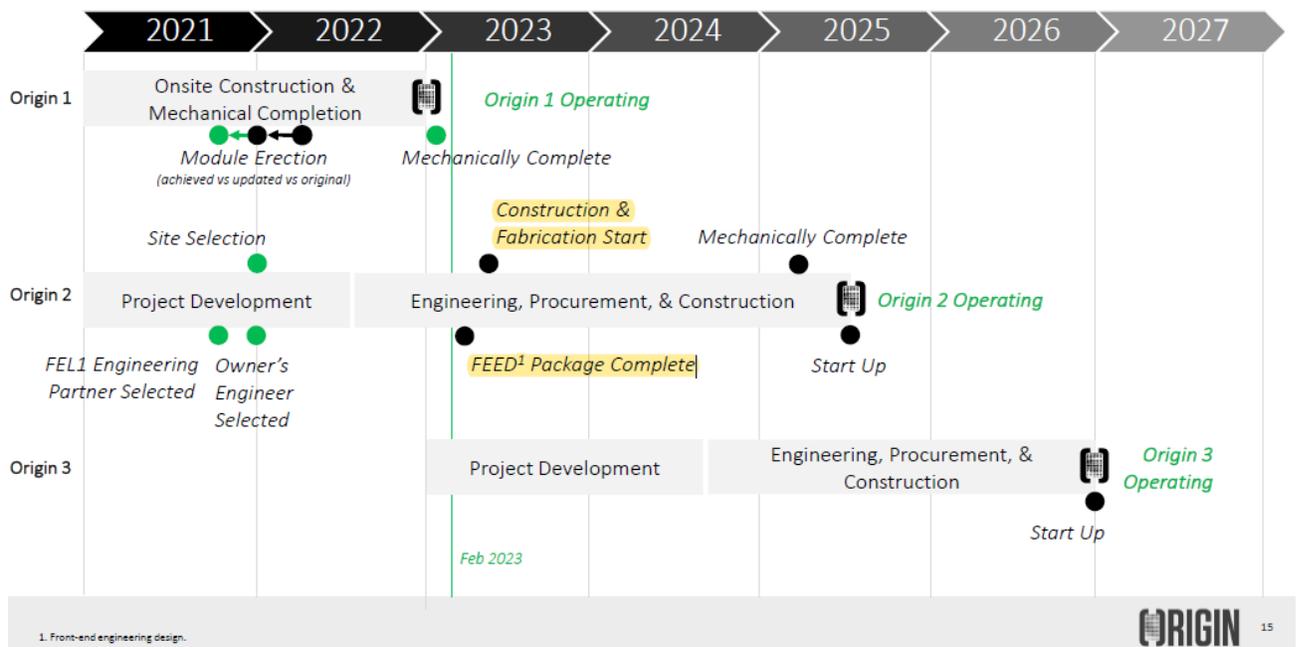
## Construction schedule - Origin 2

Company expects to provide an update on new product offerings and construction plans in mid-2023



## Construction schedule - Origin 1, Origin 2, and Origin 3

Company expects to provide an update on new product offerings and construction plans for the Origin 2 plant in mid-2023



1 119. During the call, Defendant Bissell, referring to the slides, stated:

2 ...While Origin 1 is a substantial commercial plant, Origin 2 is expected to be much larger, with  
3 far greater economies of scale.

4 \* \* \*

5  
6 ***Turning to Origin 2 on Slide 11, we continue to make progress on the front-end design, construction planning, and financing of our second plant, to be built in Geismar, Louisiana.***

7 The overall site plot plan and logistics plan have been developed. ***Notably, we have made progress on developing new products and applications which may be incorporated into the design of that plant,*** such as FDCA, PEF as well as biofuels from an oils and extractives stream  
8 co-produced alongside CMF and HTC and which has not been included in previous plans. We  
9 expect to provide an update on new product offerings and construction plans for the plant in mid-  
10 2023.

11 \* \* \*

12 I'd also like to provide you with some additional detail about what we're currently working on  
13 for Origin 2 in the area of product development. ***We have made progress developing new products and applications which may be incorporated into the design of Origin 2 such as FDCA, PEF, and biofuels.*** I highlight this because the markets for some of these new,  
14 functionally-advantaged products are showing up sooner than we initially anticipated. While we  
15 originally expected our Origin 1 product development activities to result in new, performance-  
16 advantaged products that we would make at Origin 3, we now believe that some of those products  
17 could be pulled forward meaningfully and produced at Origin 2 as well. ***We are pleased to potentially add some of these products into the demand slate of Origin 2.***

18 \* \* \*

19  
20 To summarize, I'm proud of how our team continues to execute against our Origin 1 and Origin  
21 2 construction milestones.

22 (Emphasis added).

23 120. Also on February 23, 2023, Origin filed a Form 10-K with the SEC for its fiscal year  
24 2022 (the "2022 10-K"). Defendant Bissell signed the Form 10-K and the Individual Defendants  
25 certified its accuracy under the Sarbanes-Oxley Act of 2002. In connection with Origin 2, the 2022  
26 10-K contained the same representations concerning the progress of Origin 2: "[w]e continue to make  
27 progress on front-end design, construction planning, and financing."

28 121. Analysts following the Company understood Defendants' representations on the  
"progress" being made on Origin 2's front-end design and construction planning to mean that the plant

00813961;V1

1 was on track to open on time—by the long-planned date of 2025—and within the forecasted cost of  
2 \$1.07 billion.

3 122. On February 24, 2023, Craig Stines, an analyst for Craig-Hallum Capital Group LLC  
4 (“Craig-Hallum”) reported that: “[t]he company expects to provide an update in mid-2023 on Origin 2  
5 (2.4B pounds) in Geismar, LA, *where front-end design, construction planning, and financing are*  
6 *progressing toward current planned start-up in mid-2025 with expected CapEx of \$1.1B.*” (Emphasis  
7 added).

8 123. Defendants’ statements set forth in ¶¶ 115-120 representing that the Company was  
9 making “progress” on Origin 2’s front-end design and construction planning were materially false and  
10 misleading when made and failed to disclose material facts about the true status of Origin 2—that the  
11 plant was experiencing scaling issues with the conversion of CMF to PX, which increased the plant’s  
12 costs and delayed its development. Specifically, Defendants failed to disclose that (a) in late 2022,  
13 Origin was experiencing unforeseen fouling issues “at every step” of the process of converting CMF to  
14 PX at commercial scale, resulting in the Company being unable to finalize the chemistry for Origin 2  
15 and causing delays to the plant’s engineering development and completing FEL 2 (*see* ¶¶ 83-86), (b) in  
16 December 2022, Defendants Bissell and Riley told Origin’s employees in a meeting that due to the  
17 economics of scaling PX, Origin was forced to either produce less PX at the plant or pivot the plant’s  
18 production to another product (*see* ¶ 87), (c) in early 2023, Origin’s R&D started developing solutions  
19 to the chemical issues; however, this further delayed Origin 2’s engineering designs and increased the  
20 plant’s costs (*see* ¶ 88), (d) Defendants decided to abandon PX at Origin 2 and had already prepared a  
21 plan of action to present at the March 3, 2023 meeting, to move forward with changes at the Origin 2  
22 plant to switch from PX and change construction (*see* ¶¶ 91-92) and (e) in light of these problems,  
23 Defendants entered into a deal with Avantium to produce FDCA at Origin 2; Avantium, the preeminent  
24 expert on building a commercial-scale plant to produce FDCA, advised that Origin 2 would not be  
25 operational in two years but would take several years past the plant’s timeline (*see* ¶¶ 95-100, 180-191).  
26 (*See also* ¶¶ 204-212).

27 124. The statements set forth in ¶ 118 concerning the Company’s imminent completion of  
28 Origin 2’s FEED and the plant’s construction starting by mid-2023 were materially false and misleading

1 when made because Defendants knew that (a) in late 2022, Origin was experiencing unforeseen fouling  
 2 issues “at every step” of the process of converting CMF to PX at commercial scale, resulting in the  
 3 Company being unable to finalize the chemistry for Origin 2 and causing delays to the plant’s  
 4 engineering development and completing FEL 2 (*see* ¶¶ 83-86), (b) in December 2022, Defendants  
 5 Bissell and Riley told Origin’s employees in a meeting that due to the economics of scaling PX, Origin  
 6 was forced to either produce less PX at the plant or pivot the plant’s production to another product (*see*  
 7 ¶ 87), (c) in early 2023, Origin’s R&D group started developing solutions to the chemical issues;  
 8 however, this further delayed Origin 2’s engineering designs and increased the plant’s costs (*see* ¶  
 9 88),(d) Defendants decided to abandon PX at Origin 2 and had already prepared a plan of action to  
 10 present at the March 3, 2023 meeting, to move forward with changes at the Origin 2 plant to switch from  
 11 PX and change construction (*see* ¶¶ 91-92) and (e) in light of these problems, Defendants entered into  
 12 a deal with Avantium to produce FDCA at Origin 2; Avantium, the preeminent expert on building a  
 13 commercial-scale plant to produce FDCA, advised that Origin 2 would not be operational in two years  
 14 but would take several years past the plant’s timeline (*see* ¶¶ 95-100, 180-191). (*See also* ¶¶ 204-212).

15 125. The 2022 10-K, filed February 23, 2023, also contained the following risk language with  
 16 respect to the Company’s construction of new plants, including Origin 2:

17 *Construction of our plants may not be completed in the expected timeframe or in a cost-*  
 18 *effective manner. Any delays in the construction of our plants could severely impact our*  
 19 *business, financial condition, results of operations and prospects.*

20 . . . The construction and commission of any new project is dependent on a number of  
 21 contingencies some of which are beyond our control. *There is a risk that significant*  
 22 *unanticipated costs or delays could arise due to*, among other things, errors or omissions,  
 23 unanticipated or concealed project site conditions, including subsurface conditions and changes  
 24 to such conditions, *unforeseen technical issues* or increases in plant and equipment costs,  
 25 insufficiency of water supply and other utility infrastructure, or inadequate contractual  
 26 arrangements. Should these or other significant unanticipated costs arise, this could have a  
 27 material adverse impact on our business, financial performance and operations. No assurance  
 28 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.

(Emphasis added).

126. The warnings regarding the Company’s construction of new plants, including Origin 2,  
 set forth in ¶ 125 were materially false and misleading as they failed to disclose that some of the risks,

00813961;V1

1 including but not limited to unforeseen delays and technical issues, had already materialized and  
2 impacted the planned construction and completion of the Company’s plant, Origin 2. Specifically,  
3 Defendants failed to disclose that (a) in late 2022, Origin was experiencing unforeseen fouling issues  
4 “at every step” of the process of converting CMF to PX at commercial scale, resulting in the Company  
5 being unable to finalize the chemistry for Origin 2 and causing delays to the plant’s engineering  
6 development and completing FEL 2 (*see* ¶¶ 83-86), (b) in December 2022, Defendants Bissell and Riley  
7 told Origin’s employees in a meeting that due to the economics of scaling PX, Origin was forced to  
8 either produce less PX at the plant or pivot the plant’s production to another product (*see* ¶ 87), (c) in  
9 early 2023, Origin’s R&D group started developing solutions to the chemical issues; however, this  
10 further delayed Origin 2’s engineering designs and increased the plant’s costs (*see* ¶ 88), (d) Defendants  
11 decided to abandon PX at Origin 2 and had already prepared a plan of action to present at the March 3,  
12 2023 meeting, to move forward with changes at the Origin 2 plant to switch from PX and change  
13 construction (*see* ¶¶ 91-92) and (e) in light of these problems, Defendants entered into a deal with  
14 Avantium to produce FDCA at Origin 2; Avantium, the preeminent expert on building a commercial-  
15 scale plant to produce FDCA, advised that Origin 2 would not be operational in two years but would  
16 take several years past the plant’s timeline (*see* ¶¶ 95-100, 180-191). (*See also* ¶¶ 204-212).

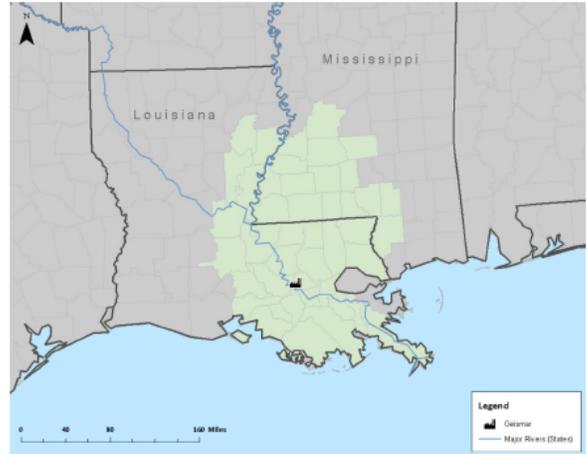
17 **B. March 7, 2023 False and Misleading Statements**

18 127. On March 7, 2023, Origin disseminated a PowerPoint on its website containing an update  
19 and overview on the Company (the “March 7, 2023 PowerPoint”). The PowerPoint provided a  
20 comprehensive update on Origin 2 and included the following slides which falsely represented that the  
21 plant’s FEED package would be imminently completed, construction would begin by mid-2023, and  
22 would only produce PET and HTC:  
23  
24  
25  
26  
27  
28

## Construction – Origin 2 (1 of 3)

“Origin Materials Announces Geismar, Louisiana as Location for Second Manufacturing Plant, Origin 2” – February 16, 2022

- The company has selected a site in Geismar, Louisiana, for the construction of its first world-scale manufacturing facility, Origin 2, subject to finalization of economic incentives from the State of Louisiana
- The plant is expected to convert an estimated 1 million dry metric tons of sustainable wood residues each year into carbon-negative materials used to make PET and HTC for a wide variety of end markets
- The site offers access to plentiful sustainable wood residues, including “residuals” or waste wood from local large-scale pulp mills. The Geismar wood basin is estimated to consist of approximately 650 million green short tons<sup>1</sup> of inventory<sup>2</sup>
- Pending state and local incentives are estimated to be worth more than \$100 million, and the State of Louisiana has preliminarily awarded Origin a Private Activity Bond volume cap allocation in the amount of \$400 million
- Construction expected to start by mid-2023 and the plant is expected to be operational mid-2025



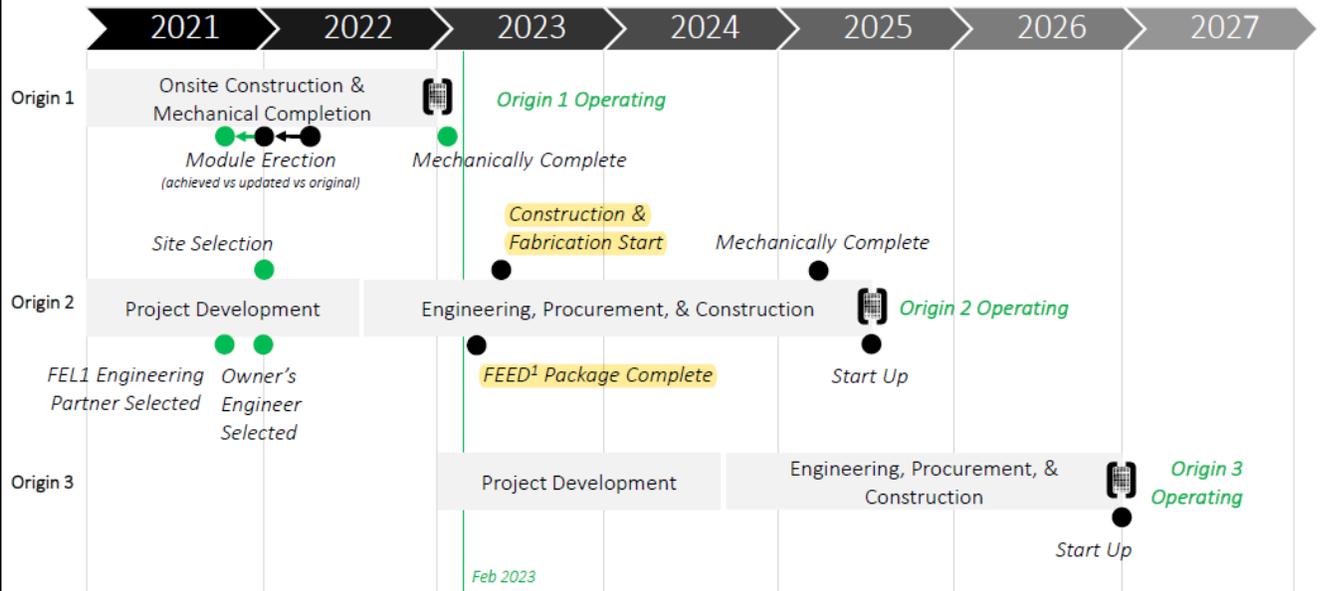
The Geismar wood basin, shown in green, offers plentiful sustainable wood residues, including “residuals” or waste wood from local large-scale pulp mills<sup>1</sup>

(Continued on next page)

1. 2,000 pounds, inclusive of moisture content.  
2. Fisher International.  
As previously reported in the Q4 2021 Earnings Presentation of Origin Materials, Inc. dated February 24, 2022.

## Construction schedule – Origin 1, Origin 2, and Origin 3

Company expects to provide an update on new product offerings and construction plans for the Origin 2 plant in mid-2023



1. Front-end engineering design.  
As previously reported in the Q4 2022 Earnings Presentation of Origin Materials, Inc. dated February 23, 2023.

1           128. The statements set forth in ¶ 127 concerning the Company’s imminent completion of  
2 Origin 2’s FEED and the plant’s construction starting by mid-2023 were materially false and misleading  
3 when made because Defendants knew that (a) in late 2022, Origin was experiencing unforeseen fouling  
4 issues “at every step” of the process of converting CMF to PX at commercial scale, resulting in the  
5 Company being unable to finalize the chemistry for Origin 2 and causing delays to the plant’s  
6 engineering development and completing FEL 2 (*see* ¶¶ 83-86), (b) in December 2022, Defendants  
7 Bissell and Riley told Origin’s employees in a meeting that due to the economics of scaling PX, Origin  
8 was forced to either produce less PX at the plant or pivot the plant’s production to another product (*see*  
9 ¶ 87), (c) in early 2023, Origin’s R&D group started developing solutions to the chemical issues;  
10 however, this further delayed Origin 2’s engineering designs and increased the plant’s costs (*see* ¶ 88),  
11 (d) in light of these problems, Defendants entered into a deal with Avantium to produce FDCA at Origin  
12 2; Avantium, the preeminent expert on building a commercial-scale plant to produce FDCA, advised  
13 that Origin 2 would not be operational in two years but would take several years past the plant’s timeline  
14 (*see* ¶¶ 95-100, 180-191), and (e) Defendants Bissell and Riley admitted internally at a meeting on  
15 March 3, 2023 that Origin 2 was being broken up into two phases, shifting to new products, and no  
16 longer producing PX, which further delayed FEL 2 for the plant (*see* ¶¶ 91-92). (*See also* ¶¶ 204-212).

17           **C. May 10, 2023 False and Misleading Statements**

18           129. On May 10, 2023, Origin filed a Form 8-K with the SEC which attached a press release  
19 announcing the Company’s financial results for the first quarter of 2023 (the “May 10, 2023 Press  
20 Release”). In the press release, Defendant Riley represented that: “[f]or Origin 2, front-end design,  
21 construction planning, and financing are progressing, and we expect to provide an update during our Q2  
22 earnings call in August.” The press release also advised that new productions may be incorporated into  
23 Origin 2, in addition to PX:

24                           For Origin 2, the Company continues to make progress on front-end design, construction  
25                           planning, and financing. The Company has also made progress developing new products and  
26                           applications that may be incorporated into the design of the plant, including FDCA, PEF, and  
27                           biofuels. The Company expects to provide an update on new product offerings and  
28                           construction plans for the Origin 2 plant in August 2023.

1 130. Origin held an earnings call with analysts the same day to discuss the Company's first  
2 quarter results (the "1Q'23 Earnings Call"), wherein Defendant Riley reaffirmed that the Company  
3 continued to make progress on FEED and construction planning for the Origin 2:

4 Third, we continue to make progress on the front-end design, construction planning, and  
5 financing of Origin 2. We continue to expect that Origin 2 can be fully funded from a  
6 combination of existing cash on hand, previously indicated traditional project financing, and  
7 potential strategic partnerships. We plan to provide an update on new product offerings and  
8 construction plans for the Origin 2 plant in August 2023 during our Q2 earnings call.

9 131. During the 1Q'23 Earnings Call, Defendant Bissell emphasized that the Company  
10 continues to make progress on Origin 2, touting the Company's ability to execute against its milestones:

11 Regarding Origin 2, our second plant to be built in Geismar, Louisiana, we continue to advance  
12 for design, construction, planning, and financing. We continue to make progress developing new  
13 products and applications, which may be incorporated into the design of the plant such as FDCA,  
14 which can be converted to [P]EF and carbon black biofuels. We expect to provide an update on  
15 new product offerings and construction plans for the plant in August 2023.

16 \* \* \*

17 To summarize, *I'm proud of how our team continues to execute against our Origin 1 and*  
18 *Origin 2 milestones.*

19 (Emphasis added).

20 132. Also on May 10, 2023, Origin filed the 1Q'23 Form 10-Q with the SEC. In connection  
21 with Origin 2, the 1Q'23 Form 10-Q contained the same representation concerning the progress of  
22 Origin 2: "[w]e continue to make progress on front-end design, construction planning, and financing."

23 133. Analysts and the market understood Defendants' representations that the Company was  
24 making "progress" on Origin 2 to mean that the Company was on track to meet the plant's scheduled  
25 opening in mid-2025.

26 134. For example, a May 11, 2023 Craig-Hallum article by Eric Stine and Aaron Spychalla,  
27 titled, "Commercial Momentum As Strong As Ever With Origin 1 Start-Up Imminent & Origin 2 On  
28 Track. Maintaining BUY Rating," stated: "Looking beyond the near-term, ORGN also continues to take

1 needed front-end design and engineering steps and along with the financing needed for planned Origin  
2 2 completion in 2025.”

3 135. Defendants’ statements set forth in ¶¶ 129-132 representing that the Company was  
4 making “progress” on Origin 2’s front-end design and construction planning were materially false and  
5 misleading when made and failed to disclose material facts about the true status of Origin 2—that the  
6 Company could not meet the plant’s long-touted schedule due to changing the plant’s product focus.  
7 Specifically, Defendants failed to disclose the following, that (a) in late 2022, Origin was experiencing  
8 unforeseen fouling issues “at every step” of the process of converting CMF to PX at commercial scale,  
9 resulting in the Company being unable to finalize the chemistry for Origin 2 and causing delays to the  
10 plant’s engineering development and completing FEL 2 (*see* ¶¶ 83-86), (b) in December 2022,  
11 Defendants Bissell and Riley told Origin’s employees in a meeting that due to the economics of scaling  
12 PX, Origin was forced to either produce less PX at the plant or pivot the plant’s production to another  
13 product (*see* ¶ 87), (c) in early 2023, Origin’s R&D group started developing solutions to the chemical  
14 issues; however, this further delayed Origin 2’s engineering designs and increased the plant’s costs (*see*  
15 ¶ 88), (d) in light of these problems, Defendants entered into a deal with Avantium to produce FDCA at  
16 Origin 2; Avantium, the preeminent expert on building a commercial-scale plant to produce FDCA,  
17 advised that Origin 2 would not be operational in two years but would take several years past the plant’s  
18 timeline (*see* ¶¶ 95-100, 180-191), (e) Defendants Bissell and Riley admitted internally at a meeting on  
19 March 3, 2023 that Origin 2 was being broken up into two phases, shifting to new products, and no  
20 longer producing PX, which further delayed FEL 2 for the plant (*see* ¶¶ 91-93), (f) by May 9, 2023,  
21 Defendants knew that construction for Origin 2 would not begin by mid-2023 and the plant was not  
22 going to be operational in mid-2025, and thus amended the Original Pepsi Offtake Agreement to reflect  
23 such (*see* ¶¶ 101-110, 200-202), (g) once the Company decided to take Origin 2 in a new direction, the  
24 Company then needed to spend “thousands of hours” to turn a new engineering assessment and to  
25 compile a revised estimate on the plant’s cost and schedule, which played a “meaningful” role in  
26 delaying the plant’s timing (*see* ¶¶ 156-159), and (h) since Defendants made the decision by March 3,  
27 2023 to shift Origin 2 to new products and no longer produce PX, the completion of FEL 2 was delayed  
28 and Defendants knew that extensive engineering work was needed before the Company could provide

00813961;V1

1 any reasonable estimate for a construction start date or start-up date timing (*see* ¶¶ 89-93, 156-159, 175-  
2 177). (*See* ¶¶ 204-212).

3 136. The 1Q'23 Form 10-Q also contained the following risk language with respect to the  
4 Company's construction of new plants, including Origin 2:

5 ***Construction of our plants may not be completed in the expected timeframe or in a cost-***  
6 ***effective manner. Any delays in the construction of our plants could severely impact our***  
7 ***business, financial condition, results of operations and prospects.***

8 . . . The construction and commission of any new project is dependent on a number of  
9 contingencies some of which are beyond our control. ***There is a risk that significant***  
10 ***unanticipated costs or delays could arise due to, among other things,*** errors or omissions,  
11 unanticipated or concealed project site conditions, including subsurface conditions and changes  
12 to such conditions, ***unforeseen technical issues or increases in plant and equipment costs,***  
13 insufficiency of water supply and other utility infrastructure, or inadequate contractual  
14 arrangements. Should these or other significant unanticipated costs arise, this could have a  
15 material adverse impact on our business, financial performance and operations. No assurance  
16 can be given that construction will be completed on time or at all, or as to whether we will have  
17 sufficient funds available to complete construction.

18 \* \* \*

19 ***We have not produced our products in large commercial quantities.***

20 We have no experience in producing large quantities of our products. While we have succeeded  
21 in producing small amounts of our products in our pilot plant for customer trials and testing  
22 purposes, we have not yet commenced large-scale production. There are significant  
23 technological and logistical challenges associated with producing, marketing, selling and  
24 distributing products in the specialty chemicals industry, including our products, ***and we may***  
25 ***not be able to resolve all of the difficulties that may arise in a timely or cost-effective manner,***  
26 ***or at all. While we believe that we understand the engineering and process characteristics***  
27 ***necessary to successfully build and operate our additional planned facilities and to scale up***  
28 ***to larger facilities, we may not be able to cost-effectively manage production at a scale or***  
***quality consistent with customer demand in a timely or economical manner.***

\* \* \*

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

. . . The construction 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. Additionally, our

1 assessment of the projected benefits associated with the construction of new manufacturing  
2 facilities is subject to a number of estimates and assumptions, which in turn are subject to  
3 significant economic, competitive and other uncertainties that are beyond our control. ***If we***  
4 ***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.***

5 ***Finally, we may not be successful or efficient in developing or implementing new production***  
6 ***processes. Innovation in production processes involves significant expense and carries***  
7 ***inherent risks. Such risks may include difficulties in designing, developing, implementing,***  
8 ***and scaling up new process technologies, development and production timing delays,*** lower  
9 than anticipated manufacturing yields, product defects, and inability to consistently meet  
10 customers' product specifications, performance and carbon intensity, or cost requirements,  
11 among others. Errors, defects in materials, operating permit and license delays, customer product  
12 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.***

13 137. The warnings regarding the Company's construction of new plants, including Origin 2,  
14 set forth in ¶ 136 were materially false and misleading as they failed to disclose that some of the risks,  
15 including but not limited to unforeseen delays and technical issues, had already materialized and  
16 impacted the planned construction and completion of the Company's plant, Origin 2. Defendants failed  
17 to disclose that (a) in late 2022, Origin was experiencing unforeseen fouling issues "at every step" of  
18 the process of converting CMF to PX at commercial scale, resulting in the Company being unable to  
19 finalize the chemistry for Origin 2 and causing delays to the plant's engineering development and  
20 completing FEL 2 (see ¶¶ 83-86), (b) in December 2022, Defendants Bissell and Riley told Origin's  
21 employees in a meeting that due to the economics of scaling PX, Origin was forced to either produce  
22 less PX at the plant or pivot the plant's production to another product (see ¶ 87), (c) in early 2023,  
23 Origin's R&D group started developing solutions to the chemical issues; however, this further delayed  
24 Origin 2's engineering designs and increased the plant's costs (see ¶ 88), (d) in light of these problems,  
25 Defendants entered into a deal with Avantium to produce FDCA at Origin 2; Avantium, the preeminent  
26 expert on building a commercial-scale plant to produce FDCA, advised that Origin 2 would not be  
27 operational in two years but would take several years past the plant's timeline (see ¶¶ 95-100, 180-191),  
28 (e) Defendants Bissell and Riley admitted internally at a meeting on March 3, 2023 that Origin 2 was

00813961;V1

1 being broken up into two phases, shifting to new products, and no longer producing PX, which further  
2 delayed FEL 2 for the plant (*see* ¶¶ 91-93), (f) by May 9, 2023, Defendants knew that construction for  
3 Origin 2 would not begin by mid-2023 and the plant was not going to be operational in mid-2025, and  
4 thus amended the Original Pepsi Offtake Agreement to reflect such (*see* ¶¶ 101-110, 200-202), (g) once  
5 the Company decided to take Origin 2 in a new direction and focus on FDCA, the Company then needed  
6 to spend “thousands of hours” to turn a new engineering assessment and to compile a revised estimate  
7 on the plant’s cost and schedule, which played a “meaningful” role in delaying the plant’s timing (*see*  
8 ¶¶ 156-159), and (h) since Defendants made the decision by March 3, 2023 to shift Origin 2 to new  
9 products and no longer produce PX, the completion of FEL 2 was delayed and Defendants knew that  
10 extensive engineering work was needed before the Company could provide any reasonable estimate for  
11 a construction start date or start-up date (*see* ¶¶ 89-93, 156-159, 175-177). (*See also* ¶¶ 204-212).

12 138. On May 10, 2023, Defendants Bissell and Riley also participated in a fireside chat at the  
13 UBS Sustainable Packaging Materials ESG Virtual Conference (the “May 10, 2023 Fireside Chat”)   
14 which the Company disseminated to investors on its website. At the start of the fireside chat, Defendant  
15 Riley asserted that PET derived from PX remained the Company’s flagship product, “...our flagship  
16 material is PET plastic, which is chemically identical to fossil-based PET plastic....”

17 139. During the May 10, 2023 Fireside Chat, Defendant Bissell touted Origin’s decision to  
18 focus on the production of PX/PET:

19 ...So the PET -- when we’re making PET, right? Obviously, we can talk about all kinds of  
20 different products, but we’ll keep it to PET in polyester. When we’re making PET, it’s identical  
21 to PET that’s made for fossil materials. So that’s brilliant. Recycles the same way. It’s the same  
22 quality as Origin Material, et cetera. So it’s sort of a great add. We kind of think of it as the  
23 system you want ideally is you have carbon-negative PET going into the system, which is then  
24 subsequently recycled indefinitely, right? That’s sort of the ideal version. And then actually,  
25 when we make some -- we make like a next-generation PET that has better performance in a  
26 whole bunch of areas. For that PET that’s actually recyclable as well....

27 140. Defendants’ statements set forth in ¶¶ 138-139 touting the Company’s process for  
28 producing PET, which is made from PX, and that representing that its “flagship” product is PX were  
materially false and misleading when made because Defendants failed to disclose that the production of  
FDCA was now the focus of Origin 2, and the plant was no longer producing PX. Specifically,

1 Defendants failed to disclose that (a) in late 2022, Origin was experiencing unforeseen fouling issues  
2 “at every step” of the process of converting CMF to PX at commercial scale, resulting in the Company  
3 being unable to finalize the chemistry for Origin 2 and causing delays to the plant’s engineering  
4 development and completing FEL 2 (*see* ¶¶ 83-86), (b) in December 2022, Defendants Bissell and Riley  
5 told Origin’s employees in a meeting that due to the economics of scaling PX, Origin was forced to  
6 either produce less PX at the plant or pivot the plant’s production to another product (*see* ¶ 87), (c) in  
7 early 2023, Defendants knew that Origin’s R&D group started developing solutions to the chemical  
8 issues; however, this further delayed Origin 2’s engineering designs and increased the plant’s costs (*see*  
9 ¶ 88), (d) in light of these problems, Defendants entered into a deal with Avantium to produce FDCA at  
10 Origin 2; Avantium, the preeminent expert on building a commercial-scale plant to produce FDCA,  
11 advised that Origin 2 would not be operational in two years but would take several years past the plant’s  
12 timeline (*see* ¶¶ 95-100, 180-191), and (e) Defendants Bissell and Riley admitted internally at a meeting  
13 on March 3, 2023 that Origin 2 was being broken up into two phases shifting to new products, and no  
14 longer producing PX, which further delayed FEL 2 for the plant (*see* ¶¶ 89-93). (*See also* ¶¶ 204-212).

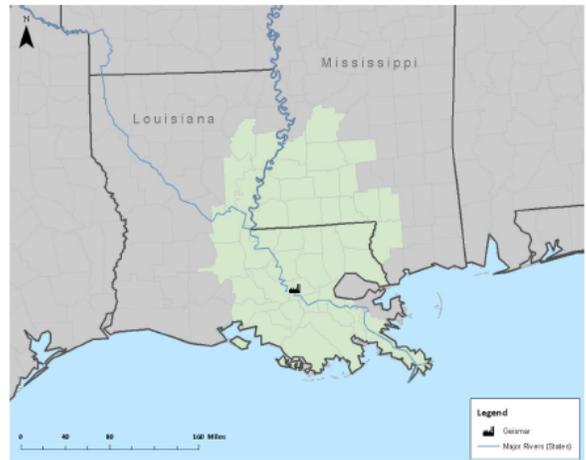
15 **D. May 12, 2023 False and Misleading Statements**

16 141. On May 12, 2023, Origin published a PowerPoint presentation on its website containing  
17 an overview and update on the Company (the “May 12, 2023 PowerPoint”). The PowerPoint provided  
18 an update on Origin 2 and included the following slide which falsely represented that the plant’s  
19 construction would imminently start by mid-2023, open in mid-2025, and would only produce PET and  
20 HTC:  
21  
22  
23  
24  
25  
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27  
28

1  
2 **Construction – Origin 2 (1 of 3)**

3 “Origin Materials Announces Geismar, Louisiana as Location for Second  
4 Manufacturing Plant, Origin 2” – February 16, 2022

- 5 • The company has selected a site in Geismar, Louisiana, for the construction of its first world-scale manufacturing facility, Origin 2, subject to finalization of economic incentives from the State of Louisiana
- 6 • The plant is expected to convert an estimated 1 million dry metric tons of sustainable wood residues each year into carbon-negative materials used to make PET and HTC for a wide variety of end markets
- 7 • The site offers access to plentiful sustainable wood residues, including “residuals” or waste wood from local large-scale pulp mills. The Geismar wood basin is estimated to consist of approximately 650 million green short tons<sup>1</sup> of inventory<sup>2</sup>
- 8 • Pending state and local incentives are estimated to be worth more than \$100 million, and the State of Louisiana has preliminarily awarded Origin a Private Activity Bond volume cap allocation in the amount of \$400 million
- 9 • Construction expected to start by mid-2023 and the plant is expected to be operational mid-2025



The Geismar wood basin, shown in green, offers plentiful sustainable wood residues, including “residuals” or waste wood from local large-scale pulp mills<sup>1</sup>

(Continued on next page)

1. 2,000 pounds, inclusive of moisture content.  
2. Fisher International.  
As previously reported in the Q4 2021 Earnings Presentation of Origin Materials, Inc. dated February 24, 2022.



14  
15  
16 142. The statements set forth in ¶ 141 concerning Origin 2’s construction starting by mid-  
17 2023, operability in mid-2025, and product focus on PET, derived from PX, were materially false  
18 and misleading when made because Defendants knew that (a) in late 2022, Origin was experiencing  
19 unforeseen fouling issues “at every step” of the process of converting CMF to PX at commercial scale,  
20 resulting in the Company being unable to finalize the chemistry for Origin 2 and causing delays to the  
21 plant’s engineering development and completing FEL 2 (see ¶¶ 83-86), (b) in December 2022,  
22 Defendants Bissell and Riley told Origin’s employees in a meeting that due to the economics of scaling  
23 PX, Origin was forced to either produce less PX at the plant or pivot the plant’s production to another  
24 product (see ¶ 87), (c) in early 2023, Origin’s R&D group started developing solutions to the chemical  
25 issues; however, this further delayed Origin 2’s engineering designs and increased the plant’s costs (see  
26 ¶ 88), (d) in light of these problems, Defendants entered into a deal with Avantium to produce FDCA at  
27 Origin 2; Avantium, the preeminent expert on building a commercial-scale plant to produce FDCA,  
28 advised that Origin 2 would not be operational in two years but would take several years past the plant’s

1 timeline (*see* ¶¶ 95-100, 180-191), (e) Defendant Bissell admitted internally at a meeting on March 3,  
2 2023 that Origin 2 was being broken up into two phases shifting to new products, and no longer  
3 producing PX, which further delayed FEL 2 for the plant (*see* ¶¶ 91-93), (f) by May 9, 2023, Defendants  
4 knew that construction for Origin 2 would not begin by mid-2023, the plant was not going to be  
5 operational in mid-2025, and Origin 2 was shifting to new products, and thus amended the Original  
6 Pepsi Offtake Agreement to reflect such (*see* ¶¶ 101-110, 200-202), (g) once the Company decided to  
7 take Origin 2 in a new direction and focus on FDCA, the Company then needed to spend “thousands of  
8 hours” to turn a new engineering assessment and to compile a revised estimate on the plant’s cost and  
9 schedule, which played a “meaningful” role in delaying the plant’s timing (*see* ¶¶ 156-159), and (h)  
10 since Defendants made the decision by March 3, 2023 to shift Origin 2 to new products and no longer  
11 produce PX, the completion of FEL 2 was delayed and Defendants knew that extensive engineering  
12 work was needed before the Company could provide any reasonable estimate for a construction start  
13 date or start-up date timing (*see* ¶¶ 89-93, 156-159, 175-177). (*See also* ¶¶ 204-212).

14 **E. May 22, 2023 False and Misleading Statements**

15 143. On May 22, 2023, Defendants Bissell and Riley participated in a fireside chat at the  
16 Morgan Stanley 8<sup>th</sup> Annual Sustainable Futures Conference (the “May 22, 2023 Fireside Chat”) which  
17 the Company disseminated to investors on its website. At the start of the fireside chat, Defendant Riley  
18 reiterated Origin 2’s 2025 timeline: “[a]nd then our much larger and first world-scale plant Origin 2, is  
19 scheduled to come online in the 2025 time frame in Geismar, Louisiana.”

20 144. Later during the chat, Defendant Riley touted Origin’s process for PET:

21 “Another partnership just highlight that we announced under recently Indorama. Indorama is the  
22 world’s largest maker of PET plastic, but not everybody has heard of them in the U.S. markets,  
23 but a very natural partnership for us. If you think about what leaves our plants is the paraxylene  
24 component of PET and then partnering with someone like Indorama to convert that further into  
25 PET, makes a lot of sense. They have a lot of the customer relationships and stuff like that. And  
26 so I think you’ll see us continuing to do strategic partnering like that, where we stay as far  
27 upstream as we can and then partner with sort of best-in-class partners to deliver to the end  
28 markets.”

1 145. Similarly, Defendant Bissell added:

2 ...More specifically, I think there are a bunch of sort of tactical issues around it, like if you're  
3 looking at mechanically recycled PET, which is the majority of recycled PET by far, the quality  
4 is just not quite the same as new material that we can make.

5 And so that makes a difference for a lot of customers for them to be able to get the quality of  
6 product that they want. They need to be able to use new stuff. They can't use mechanically  
7 recycled materials. We tend to have a lower carbon footprint. In fact, not tend to. I don't know  
8 of any recycled PET that has a lower carbon footprint than the stuff that we can make. So there's  
9 a trade-off in terms of the carbon impact and circularity. Again, I think that's not so much a  
concern because all of it is going to get consumed, but what we can make and the recycle  
material, but it does make for a trade-off for customers. Geographic flexibility and scale can  
make a difference."

10 146. The statements set forth in ¶¶ 143-145 concerning Origin 2's opening in mid-2025 and  
11 the viability of the Company's processes for producing PET, derived from PX, were materially false  
12 and misleading when made because Defendants knew and/or failed to disclose that (a) in late 2022,  
13 Origin was experiencing unforeseen fouling issues "at every step" of the process of converting CMF to  
14 PX at commercial scale, resulting in the Company being unable to finalize the chemistry for Origin 2  
15 and causing delays to the plant's engineering development and completing FEL 2 (*see* ¶¶ 83-86), (b) in  
16 December 2022, Defendants Bissell and Riley told Origin's employees in a meeting that due to the  
17 economics of scaling PX, Origin was forced to either produce less PX at the plant or pivot the plant's  
18 production to another product (*see* ¶ 87), (c) in early 2023, Origin's R&D group started developing  
19 solutions to the chemical issues; however, this further delayed Origin 2's engineering designs and  
20 increased the plant's costs (*see* ¶ 88), (d) in light of these problems, Defendants entered into a deal with  
21 Avantium to produce FDCA at Origin 2; Avantium, the preeminent expert on building a commercial-  
22 scale plant to produce FDCA, advised that Origin 2 would not be operational in two years but would  
23 take several years past the plant's timeline (*see* ¶¶ 95-100, 180-191), (e) Defendant Bissell admitted  
24 internally at a meeting on March 3, 2023 that Origin 2 was being broken up into two phases, shifting to  
25 new products, and no longer producing PX, which further delayed FEL 2 for the plant (*see* ¶¶ 91-93),  
26 (f) by May 9, 2023, Defendants knew that construction for Origin 2 would not begin by mid-2023, the  
27 plant was not going to be operational in mid-2025, and Origin 2 was shifting to new products, and thus  
28 amended the Original Pepsi Offtake Agreement to reflect such (*see* ¶¶ 101-110, 200-202), (g) once the  
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1 Company decided to take Origin 2 in a new direction and focus on FDCA, the Company then needed to  
2 spend “thousands of hours” to turn a new engineering assessment and to compile a revised estimate on  
3 the plant’s cost and schedule, which played a “meaningful” role in delaying the plant’s timing (*see* ¶¶  
4 156-159) and (h) since Defendants made the decision by March 3, 2023 to shift Origin 2 to new products  
5 and no longer produce PX, the completion of FEL 2 was delayed and Defendants knew that extensive  
6 engineering work was needed before the Company could provide any reasonable estimate for a  
7 construction start date or start-up date timing (*see* ¶¶ 89-93, 156-159, 175-177). (*See also* ¶¶ 204-212).

8 **F. June 8, 2023 False and Misleading Statements**

9 147. On June 8, 2023, Defendants Bissell and Riley participated in a fireside chat at the TD  
10 Cowen’s Sustainability Week Conference (the “June 8, 2023 Fireside Chat”) which the Company  
11 disseminated to investors on its website. At the start of the fireside chat, Defendant Riley asserted that  
12 PX remained the Company’s flagship product and described the Company’s process for converting CMF  
13 to PX and then to PET as a “highly efficient platform technology”:

14 So Origin, we’ve spent over 10 years developing a highly proprietary technology platform that  
15 really has created a new fundamental chemical building block called CMF, chloro-methyl-  
16 furfural. And we set up from day one to be cost competitive with oil while using cellulose as our  
17 feedstock. So think the waste coming off a sawmill, agricultural waste as a feedstock we take in.

18 Highly efficient process that basically retains every carbon atom as a soluble product and  
19 produces three core intermediates, CMF, which I mentioned, ***which can go on to our flagship***  
20 ***product, para-xylene, which go into PET plastic*** for example, which is a \$100-billion market  
opportunity; solid called hydrothermal carbon, which can be used to make carbon black, which  
can go into tires and other things like that, and in the biofuel stream.

21 And so ***highly efficient platform technology***. Pepsi, Nestlé, and Danone were early investors in  
22 the company, joined our Board and helped prove our materials all the way through to food-grade  
23 PET plastic, which was a significant milestone in our development.

24 (Emphasis added).

25 148. During the June 8, 2023 Fireside Chat, Defendant Bissell touted Origin’s decision to  
26 focus on the production of PET, derived from PX:

27 **John Bissell - Origin Materials, Inc. - Co-CEO:**

1 ...I think the way to think about PET first is PET fits the end-of-life criteria and frankly, a lot of  
2 the application criteria, really, really well. So it is a very usable plastic. It doesn't have a lot of  
3 additives in it which costs sort of human health concerns and the same that you might see with  
4 polycarbonates or PVC or [methane] or something like that. And so it is sort of the plastic you  
5 want to go to that actually makes that data. You want to use this kind of plastic relative to other  
6 kinds of materials out there. It has great properties in terms of transparency. It's strong. It can  
7 work as a fiber. It's just a great material.

8 From an end-of-life perspective, it already has the largest recycling stream of any plastic, of any  
9 organic material -- or actually, synthetic organic material. And so it's really in a great spot from  
10 an end-of-life perspective, but we need to get better. Our view was if we're going to bring our  
11 platform, which is a pretty broad-based, carbon-negative platform, to a particular polymer,  
12 particular material; first, we wanted to take something that was already the best out there and we  
13 make it better. We weren't going to try to sort of drag up one of the less performance materials  
14 and try to make it average.

15 *And so for us, going into PET was very intentional.* Again, it's one of the best polymers out  
16 there from a performance perspective. It's clearly the best from an end-of-life perspective, then  
17 what we do is we make it carbon negative.

18 And that's important because even if we got -- as a species, we got spectacular at capturing and  
19 recycling all of our PET and all of our materials, a lot of our materials are going into durable  
20 applications. Stuff that isn't getting used once and thrown away. And so, we are throwing away  
21 as much material as we consume to make stuff. And so consequently, you're always going to  
22 have to make a lot of material.

23 Things like a t-shirt or apparel are often made of polyester, that's sort of the dominant material  
24 to expand supply of textiles. And ideally, you're not throwing those things away after one use.  
25 Something's gone horribly wrong if you throw it away after one year. And so we need ways to  
26 make these materials. Our view is take the best material that we can make, make it in a carbon-  
27 negative way, and then reuse it indefinitely.

28 (Emphasis added).

149. Later during the chat, in response to a question by a TD Cowen analyst concerning  
Origin's near-term focus on the production of PET, Defendant Riley reiterated that PX remained the  
Company's flagship product:

**Thomas Boyes - TD Cowen – Analyst:**

Great. And you touched upon this at the beginning of the call here. What are the different  
opportunities for CMF and HTC? *In the near term, it sounds like it's PET*, fuel pellets, activated  
carbon; and longer-term, PEF, carbon black, and agriculture. Like how do you think about those  
different opportunities as far as which one is the kind of the largest component of that and how  
do you think that develops over time?

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1 **Rich Riley - Origin Materials, Inc. - Co-CEO:**

2 Yes, so CMF and HTC are both really important intermediates for us. So it's -- I make the  
3 analogy sometimes to gasoline and diesel -- Yeah. Big fractional components coming out of a  
4 refinery. If you want to be selling both to the high side, but you can't. So we sort of don't have  
5 a favorite child.

6 ***CMF, as you said, para-xylene, which hopefully goes into PET, is kind of our flagship and***  
7 ***our first product.*** It's effectively an unlimited market for our purposes. The great spot to be for  
8 all the reasons that I mentioned earlier....

9 (Emphasis added).

10 150. The statements set forth in ¶¶ 147-149 representing that the Company's process for  
11 converting CMF to PX as a "highly efficient platform technology" and that its "flagship" product is PX  
12 were materially false and misleading when made because Defendants failed to disclose that Origin 2  
13 was no longer producing PX. Specifically, Defendants failed to disclose that (a) in late 2022, Origin  
14 was experiencing unforeseen fouling issues "at every step" of the process of converting CMF to PX at  
15 commercial scale, resulting in the Company being unable to finalize the chemistry for Origin 2 and  
16 causing delays to the plant's engineering development and completing FEL 2 (*see* ¶¶ 83-86), (b) in  
17 December 2022, Defendants Bissell and Riley told Origin's employees in a meeting that due to the  
18 economics of scaling PX, Origin was forced to either produce less PX at the plant or pivot the plant's  
19 production to another product (*see* ¶ 87), (c) in early 2023, Defendants knew that Origin's R&D group  
20 started developing solutions to the chemical issues; however, this further delayed Origin 2's engineering  
21 designs and increased the plant's costs (*see* ¶ 88), (d) in light of these problems, Defendants entered into  
22 a deal with Avantium to produce FDCA at Origin 2; Avantium, the preeminent expert on building a  
23 commercial-scale plant to produce FDCA, advised that Origin 2 would not be operational in two years  
24 but would take several years past the plant's timeline (*see* ¶¶ 95-100, 180-191), (e) Defendant Bissell  
25 admitted internally at a meeting on March 3, 2023 that Origin 2 was being broken up into two phases,  
26 shifting to new products, and no longer producing PX, which further delayed FEL 2 for the plant (*see*  
27 ¶¶ 91-93), and (f) by May 9, 2023, Defendants knew that Origin 2 was shifting its production to new  
28

1 products, and thus amended the Original Pepsi Offtake Agreement to reflect the production of FDCA at  
2 the plant (*see* ¶¶ 101-110, 200-202). (*See also* ¶¶ 204-212).

3 **VI. THE TRUTH IS REVEALED**

4 **A. Origin Reveals that Origin 2 Will Be Delayed, Cost More, Scaled Down, and No**  
5 **Longer Produce PX**

6 151. On August 9, 2023, Origin shocked the market when it reported its financial results for  
7 second quarter of 2023 and disclosed that Origin 2 was not progressing towards a mid-2025 start-up as  
8 previously represented, and that the plant would be smaller in scale than represented, cost more, and no  
9 longer produce its target product, PX.

10 152. Specifically, Origin issued a press release in which Defendant Riley disclosed for the  
11 first time that the main production focus for Origin 2 would be FDCA, the plant would not be producing  
12 PX and PET, and that the construction of the plant would be broken up into 2 phases with start-up for  
13 phase 1 projected for late 2026 to 2027 and start-up for phase 2 pushed to 2028:

14 ...we are updating the product slate at our second commercial plant, Origin 2, to focus on the  
15 production of FDCA, for which we have seen much greater demand than anticipated, as we  
16 indicated in February. While we initially expected Origin 2 to primarily focus on para-xylene  
17 ('pX') production for bio-PET, we have made significant progress in FDCA product  
18 development and commercialization and we now plan to bring FDCA forward to Origin 2, rather  
19 than at our third planned commercial plant, Origin 3, as initially reported in 2021.

20 FDCA is a highly strategic focus for our platform, as its applications tend to offer performance  
21 advantages, higher margins, and thus higher value uplift for our platform intermediate, CMF.  
22 ...we are revising the plant's outlook and introducing a phased approach to construction. We  
23 expect that adapting in this manner to the high-cost environment will reduce project risk as we  
24 move forward on the path to profitability, with Phase 1 start-up projected for late 2026 to 2027  
25 and Phase 2 start-up projected for 2028.

26 153. Pertaining to the increased cost of completing Origin 2, the press release revealed that,  
27 consistent with the Pepsi Offtake Agreement Amendments, FID would not be completed until 2025 and,  
28 thus, construction could start not until sometime later in 2025, at the earliest:

The capital budget for Phase 1 of Origin 2 is expected to be up to \$400 million while the capital  
budget for Phase 2 is projected to be up to \$1.2 billion. This compares to the original \$1.07  
billion aggregate capital budget estimate originally provided in February 2021.... The Company

1 expects capital expenditure of up to \$50 million for 2024, with the majority of Origin 2 capital  
2 spend to occur following the project's final investment decision ("FID") in 2025.

3 154. On August 9, 2023, Defendants held an earnings call to discuss its results for the second  
4 quarter of 2023 (the "2Q'23 Earnings Call"). During the call, Defendant Bissell stated that instead of  
5 merely incorporating FDCA into Origin 2 as previously represented, FDCA will be the plant's primary  
6 product:

7 ...Origin 2 will focus primarily on FDCA production...our current plan is a rational  
8 prioritization of Origin's researches towards more profitable, typically performance-enhanced  
9 chemical applications [at] Origin 2...

10 155. Regarding the revised timeline for Origin 2, Defendant Bissell added:

11 ...we now expect Origin 2 to be completed in 2 phases with Phase 1 estimated to be completed  
12 in late 2026 to 2027 and Phase 2 estimated to be completed in 2028 compared with our initial  
13 expectation for a mid-2025 completion. During Phase 1, the company expects to achieve  
14 profitability from its oils and extractives stream. From this stream, Origin plans to produce a  
15 drop-in biofuel with potential applications, including marine fuel and heat and power  
16 generation....

17 Phase 2 will expand production to include the mass production of platform chemicals, CMF and  
18 HTC...

19 156. During the 2Q'23 Earnings Call, Steve Byrne, an analyst with Bank of America asked  
20 Defendant Bissell to provide more information as to what drove Origin's delay and increased cost:

21 I want to -- a couple of questions here on Origin 2. Is any of the delay in the cost increase because  
22 of shifting the focus away from paraxylene over to FDCA? I kind of suspect not, but I wondered  
23 if that was part of it. And maybe more importantly, when you first rolled out your financials for  
24 Origin 2, you were targeting 1 million tons of biomass feedstock into that plant. Is that still the  
25 design? But more importantly, you were targeting \$0.16 a pound of margin from this PET  
26 pathway. As you move towards more of an FDCA pathway, what would you suggest is a more  
27 reasonable margin that, that plant you think is going to be able to produce?

28 157. In response, Defendant Bissell admitted that shifting to FDCA played a "meaningful"  
role in delaying Origin 2's timing and increasing the plant's cost and revealed that Origin 2's scale had  
been cut in half:

1 ...So first, you asked is FDCA and shifting towards that kind of product base part of the capital  
2 increase and schedule shift. And the answer actually is, in part, yes. It's not the only thing, but  
3 it's meaningful. So looking at these other products, one, takes more time, right? So we obviously  
4 didn't expect to be producing those kinds of products off of OM2 when we originally provided  
5 our estimates on schedule and cost. And so there are changes that get made. I'd say, generally  
6 speaking, if you're looking at FDCA, that has more of a schedule impact than it does an overall  
7 cost impact. And then for things like carbon black and other higher-value HTC products, that  
8 has both a schedule and a cost impact. So those are a part of it, although, again, they're not the  
9 only things. They're not solely responsible for that.

10 \* \* \*

11 And so consequently, in a higher cost environment where we're going in general, right, which  
12 includes some of the things that we enumerated but things like higher material prices, obviously  
13 higher labor costs, energy, all sorts of things like that, as a consequence of those, we need to  
14 adjust by scoping down the scale of the plant. And so we expect that we're going to have a  
15 smaller-scale plant than the 1 million tons of biomass fed originally. And we provide a summary  
16 of that on one of the appendix slides in our earnings presentation. But generally speaking, we're  
17 expecting, by the time we're done with this plant, to be at about 500 KTA of feedstock rather  
18 than 1 million.

19  
20 158. During the same call, Eric Stine, an analyst with Craig-Hallum asked Defendant Bissell  
21 to provide further explanation as to the cause of Origin 2's delay:

22 Got it. And then just as we think about the change in the timeline, I can appreciate obviously  
23 higher interest rates. But that's a new dynamic since this all got started and you first gave that  
24 number for Origin 2 back in 2021, but it's not, again, new here over the last number of quarters.  
25 So I'm just trying to kind of think about how much of this can be ascribed to that, a higher rate  
26 environment versus, as you said, it's FDCA, you just need -- more time needed on the  
27 development side.

28  
29 159. In response, Defendant Bissell confirmed that once the Company pivoted the focus of  
30 Origin 2 to FDCA, an incredible amount of work was then required to begin to rework Origin 2's  
31 engineering and design and calculate a revised forecast on the plant's cost and schedule, but falsely  
32 implied that the Company had only very recently decided to pivot to a new product focus for the plant:

33 Yes. So really, I think -- the first thing that's worth thinking about is -- and keeping in mind is,  
34 how long it takes to turn a new engineering assessment? And so as we have made adjustments  
35 and thought about sort of how to put both the opportunities that have been presented and the  
36 challenges that have arisen into a sort of bucket, and then figure out how -- what's the best way  
37 to navigate through those sorts of things. Generally speaking, it could be very difficult to  
38 understand what the impact of those is going to be on something like a final cost or a revenue

1 number or even a schedule, frankly, until you turn that through tens of thousands of hours of  
2 engineering time to convert that into a new scenario, right?

3 And in our case, we were actually running multiple scenarios. You put them in, you put them  
4 into the black box, and you get them out after a period of time. And so our view was, generally  
5 speaking, we need to process all of this information. And it wasn't really until all that recently  
6 that it made sense to take a different scenario approach to this. I think it's also worth mentioning  
7 that it's not just rates, right? So rates are one part of it, and they are a meaningful part. But there  
8 are other things as well that have an impact. Again, I mentioned sort of labor rates, materials  
9 costs, even energy volatility and volatility around some of these things can have a pretty  
10 significant impact on the way that you have to structure the risk management around plants like  
11 this.

12 160. In connection with the earnings call, Origin disseminated a PowerPoint presentation on  
13 its website (the "2Q23 Earnings Presentation"). The 2Q23 Earnings Presentation revealed that the  
14 Company's strategy of focusing on high-margin products, such as FDCA, *began in February 2023*: "[a]s  
15 of February 2023, Origin Materials' commercial strategy evolved from demand generation to revenue  
16 generation and the development of higher margin products, and as such the Company does not plan to  
17 provide quarterly updates to its total signed offtake agreements and capacity agreements but will provide  
18 updates as appropriate."

19 161. The 2Q23 Earnings Presentation further clarified that FDCA, the new focus of Origin 2  
20 and replacement for PX, would not be produced at the plant until 2028.

21 162. The market's response to the news concerning Origin 2 was swift and devastating, as the  
22 Company's share price fell \$2.88 per share, or 66.5%, to close at \$1.45 per share on August 10, 2023.

23 163. Analysts were shocked by the substantial Origin 2 delays and changes.

24 164. In a report on August 10, 2023, Sriharsha Pappu, an analyst at HSBC Global Research  
25 believed the new plans for Origin 2 materially altered the investment case for the Company:

26 The Origin investment case was all about proof of concept with plant 1 (see 2023 all about proof  
27 of concept, 6 Jan 2023), on technology and yields, followed by commercially significant output  
28 from plant 2 that would allow for value to be ascribed to the order book and to fund the plants to  
follow – Origin 3 and beyond. ***Now, with Origin 2 delayed and significantly more expensive  
than indicated earlier, that investment case is broken with the NPV of each plant lower and  
significant questions around funding capabilities and timelines to cash flow generation. The  
USD10+ bn in product demand is irrelevant without access to production capacity before  
2026.***

\* \* \*

1  
2 Our individual, sequential plant DCF valuation for Origin is heavily impacted by the delays to  
3 Origin 2 and cost overruns which will cascade across all of the future plants that the company  
4 has planned. We downgrade to Hold from Buy on a broken investment case and cut TP to USD2  
5 from USD15.

(Emphasis added).

6 165. On August 11, 2023, Craig-Hallum analysts Eric Stine and Aaron Spychalla described  
7 the gravity of Origin 2's delay and product switch to FDCA:

8  
9 In our opinion, *this all takes a back seat to the major curveball served up in the form of the*  
10 *decision to shift planned Origin 2 production to focus on FDCA (a renewable substitute used*  
11 *in the production of polyester) from paraxylene (pX) to capture expected higher margins...* In  
12 addition, it will now be at a minimum 2-3 years longer to find out whether this shift is successful.  
13 As a result, we are lowering our rating on ORGN to a Hold.

\* \* \*

13 This decision also changes the planned timeline for Origin 2 with ORGN planning a phased  
14 approach with Phase 1 start-up now planned for late 2026 to 2027 and Phase 2 start-up expected  
15 in 2028. *This decision is in response to "much greater demand than anticipated" for FDCA*  
16 *and we sense that this new timeline is the result of having to "re-start the clock" in terms of*  
17 *engineering and scope for the new plant focus.*

(Emphasis added).

18 **B. Origin 2's Failure to Produce PX/PET and Stay on Schedule Has Lasting Negative**  
19 **Effects as the Company Lays Off 30% of its Workforce, and Receives Notice of**  
20 **Delisting**

21 166. In the wake of Origin 2's extensive delay and the Company's revised business model,  
22 Origin's stock plummeted in the following weeks, as the Company's main source of future revenue –  
23 Origin 2 – is now nowhere near completion.

24 167. On October 31, 2023, Origin's stock price closed at \$0.99, an additional 68% drop since  
25 August 10, 2023.

26 168. On November 20, 2023, the Company announced that it was reducing its workforce by  
27 30% as part of an "organizational realignment" to streamline operations and focus on near-term,  
28 high-margin priority initiatives.

1           169. On January 5, 2024, Origin filed a Form 8-K with the SEC disclosing that the Company  
2 received a letter dated January 4, 2024 from the NASDAQ notifying the Company that it failed to meet  
3 the listing requirements, as the Company's stock had closed below \$1.00 per share over 30 consecutive  
4 business days.

5 **VII. ADDITIONAL ALLEGATIONS OF SCIENTER**

6           170. As alleged herein, Defendants acted with scienter in that they knew, or recklessly  
7 disregarded, that the public documents and statements they issued and disseminated to the investing  
8 public in the name of the Company or in their own name during the Class Period were materially false  
9 and misleading.

10           171. Defendants knowingly and substantially participated or acquiesced in the issuance or  
11 dissemination of such statements and documents as primary violations of the federal securities laws.  
12 Defendants, by virtue of their receipt of information reflecting the true facts regarding the status of  
13 Origin 2, including but not limited to chemistry and engineering obstacles, pivoting away from focusing  
14 on the production of PX, and delays to completing FEED, commencing construction, and becoming  
15 operational, their control over, or receipt or modification of Origin's allegedly materially misleading  
16 statements, were active and culpable participants in the fraudulent scheme alleged herein.

17           172. Defendants knew or recklessly disregarded the false and misleading nature of the  
18 information that they caused to be disseminated to the investing public. The fraudulent scheme  
19 described herein could not have been perpetrated during the Class Period without the knowledge or  
20 complicity or, at least, the reckless disregard of the personnel at the highest levels of the Company,  
21 including the Individual Defendants.

22           173. Defendants, because of their positions within Origin, made or controlled the contents of  
23 the Company's public statements during the Class Period. The Individual Defendants were provided  
24 with or had access to the information alleged herein to be false or misleading prior to or shortly after  
25 their issuance and had the ability and opportunity to prevent their issuance or cause them to be corrected.  
26 Because of their positions and access to material non-public information, the Individual Defendants  
27 knew or recklessly disregarded that the adverse facts specified herein had not be disclosed to and were  
28 being concealed from the public and that the positive representations that were being made were

00813961;V1

1 materially false and misleading. As a result, the Individual Defendants are responsible for the accuracy  
2 of Origin's corporate statements and are therefore responsible and liable for the representations  
3 contained therein.

4 **A. Defendants Knew before February 23, 2023 that the Focus of Origin 2 Had Shifted**  
5 **from PX, FEL 2 Was Delayed for the Plant, and the Company Would Not Meet the**  
6 **Plant's Schedule**

7 174. During the March 3, 2023 meeting, CW1 heard Bissell discuss how Origin 2 would now  
8 be broken up into two phases, was shifting to new products, and would no longer produce PX. This was  
9 communicated by Bissell to all participants at that meeting. CW1 recalled Bissell explaining the changes  
10 by saying things like: PX is not performing strongly, the cost of the plant is very high, and we need to  
11 get the company net positive. Accordingly, Bissell told the group, "we are going to move in this new  
12 direction." Bissell was the first person that CW1 heard reveal that the Company would not produce PX  
13 at Origin 2.

14 175. CW1 stated that at the March 3, 2023 meeting, Bissell presented a detailed plan of action  
15 to move forward with the changes at Origin 2 away from PX production and the changes to plant  
16 construction. CW1 stated that since a plan of action to move forward with the changes at Origin 2 were  
17 already formulated and communicated to the group during the March 3, 2023 meeting, Bissell must have  
18 known well before March 3, 2023 that Origin 2 would not produce PX in order for Bissell and  
19 management to have time to come up with the change in plan. CW1 stated that the plan announced on  
20 March 3, 2023 was likely formulated months in advance because it was well thought out by the time it  
21 was conveyed by Bissell to CW1 and others at the March 3, 2023 meeting.

22 176. CW1 recalled that toward the end of March 2023, there were email communications in  
23 his group discussing that FEL 2 was delayed for Origin 2. CW1 stated that the late March 2023 emails  
24 reiterated what Bissell told the group at the weekly meetings, where Bissell discussed Origin 2's  
25 production changes away from PX, construction delays, and FEL2 delays.

26 177. The new products described by Defendants Bissell and Riley that were incorporated into  
27 Origin 2 before February 23, 2023 included FDCA based on the following: (1) Origin entering into a  
28 deal with Avantium on February 22, 2023 to produce FDCA at Origin 2 (*see* ¶¶ 95-100); (2) Origin

1 making a strategic shift to its commercial strategy in February 2023 to focus on high-margin products,  
2 such as FDCA (*see* ¶ 160); (3) the amendments to the Pepsi Offtake Agreement on May 9, 2023, which  
3 set forth Origin 2’s revised timeline and incorporated FDCA (*see* ¶¶ 101-110); and (4) Defendant  
4 Bissell’s admissions on August 9, 2023 that once the Company decided to take Origin 2 in a new  
5 direction and focus on FDCA, the Company needed to spend “thousands of hours” to turn a new  
6 engineering assessment and compile a revised estimate on the plant’s cost and schedule, which played  
7 a “meaningful” role in delaying the plant’s timing (*see* ¶¶ 156-159).

8 178. On May 10, 2023, Defendants represented that Origin 2’s front-end design and  
9 construction planning were “progressing.” (*See* ¶¶ 129-132). Then, on May 12, 2023, Defendants  
10 asserted that Origin 2 would only be producing PET and HTC, the plant’s construction was expected to  
11 start by mid-2023, and the plant was expected to be operational in mid-2025. (*See* ¶ 141).

12 179. By the time Origin announced its financial results for the first quarter of 2023 on May  
13 10, 2023, Defendants knew that the focus of Origin 2 had shifted to the production of FDCA (and thus  
14 PEF), the plant was no longer producing PX, FEL 2 was delayed for the plant, and the Company would  
15 not meet the plant’s schedule for construction and opening.

16 **B. The Avantium Offtake Agreement Is Indicative of Scienter**

17 180. Avantium is a technology development company specializing in renewable chemistry  
18 that is publicly traded on Euronext Amsterdam and Euronext Brussels (symbol: AVTX).

19 181. Avantium is an expert in the field of renewable and sustainable chemistry and states that  
20 “Given the huge potential for FDCA, industrial production of this building block has been pursued and  
21 researched for over 100 year without success.” <https://www.avantium.com/lead-products/#fdca>

22 182. Avantium’s lead product is PEF and it was the first to engineer how to build a  
23 commercial-scale plant for FDCA. In December 2021, Avantium announced it had made its FID on its  
24 flagship plant, the world’s first factory to produce FDCA on a commercial scale.

25 183. As of August 16, 2023, Avantium’s FDCA flagship plant remains” the first-of-its kind”  
26 and is on schedule to start producing FDCA in 2024. [https://www.avantium.com/wp-](https://www.avantium.com/wp-content/uploads/2023/08/20230816-Avantium-Half-Year-Results-2023-Analyst-Call-Transcription.pdf)  
27 [content/uploads/2023/08/20230816-Avantium-Half-Year-Results-2023-Analyst-Call-Transcription.pdf](https://www.avantium.com/wp-content/uploads/2023/08/20230816-Avantium-Half-Year-Results-2023-Analyst-Call-Transcription.pdf)  
28

1 184. On February 21, 2023, Origin entered into a partnership agreement with Avantium to  
2 accelerate the production of FDCA, the key building block of PEF, by converting sustainable wood  
3 residues via CMF into FDCA on an industrial scale.

4 185. Origin's partnership with Avantium included a non-exclusive license agreement,  
5 providing Origin access to relevant parts of Avantium's process technology which would enable the  
6 conversion of Origin-produced CMF derivatives into FDCA at a 100 kiloton per year scale facility  
7 operated by Origin. The agreement also granted Origin a license to use certain parts of Avantium's  
8 YXY® process for the purpose of: (1) designing, constructing, and operating the licensed facility; and  
9 (2) producing, using, selling, and converting FDCA manufactured at that facility.

10 186. In exchange for granting Origin access to its technology, Avantium received an upfront  
11 payment of €5 million and additional payment of €7.5 million as a result of the licensing agreement to  
12 enable the conversion of CMF into FDCA at an Origin facility. Avantium was also entitled to receive  
13 additional payments depending on the achievement of certain development milestones and, following  
14 the commercial operations date of the licensed Origin facility, Avantium would be eligible to receive  
15 royalties (between 3%-6%) for each metric ton of FDCA produced at the Origin plant.

16 187. Defendants knew pivoting to the production of FDCA from PX required Avantium's  
17 technology and assistance, as explained by Avantium's CEO on a conference call with analysts on  
18 February 22, 2023:

19 ... The license agreement provides Origin access to relevant parts of Avantium's process  
20 technology to enable the conversion of CMF into FDCA at a facility of 100 kiloton per annum  
21 scale...***Avantium will provide Origin Material for instance with a Process Design Package***  
22 ***(PDP) and an operating manual. Avantium will also support Origin Materials during the***  
23 ***FEED- (front-end engineering design) and EPC- (engineering, procurement and***  
24 ***construction) phases, as well as the commissioning and start-up of the licensed facility.*** With  
25 this, Origin can design, construct and operate a 100 kiloton licensed facility and produce, use,  
26 sell FDCA that is manufactured at that facility...

(Emphasis added).

26 188. Avantium's CEO stated during the February 22, 2023 call that it would take Origin  
27 *several years* to implement FDCA into its Origin 2 plant design:  
28

1 **Fernand de Boer (Bank Degroof Petercam analyst):**

2 ...I have a couple of questions. First on the capacity. The press release of Origin of actually says  
3 it has a capacity of 25kt conversion. So could you tell me how they would get at 100kt of capacity  
4 then. That's the first one, and also do they have sufficient financial resources to get at this 100kt,  
because so far they still have to start.

5 Then, the second one on the capacity of Geleen, if I remember correctly that 1500kg or not?

6 And then on this licensing fees; there is an upfront payment of EUR5 million, which has already  
7 been done in 2022; w[hat] is that for because the press release of Origin also says it is an  
8 additional payment so you have EUR 7.5 million and then EUR 5 million so is it in total then  
EUR 12.5 million. Is that then an upfront payment for license or is that for royalties?

9 **Tom van Aken (CEO Avantium):**

10 ...Let me go to the first question; basically what Origin has done so far, they have constructed  
11 what they call OM1, that is a plant that they are building in Sarnia in Canada. *That has a capacity  
12 of 25kt that is input or feedstock and the output is 5kt of CMF but that is not sufficient to feed  
13 into the license facility that they intend to build with using our YXY technology. So that is  
material that will come from future plants.*

14 **Fernand de Boer:**

15 When is the OM 2 coming into production then?

16 **Tom van Aken (CEO Avantium):**

17 That facility is going to be built in Geismar in Louisiana, and we have to be careful with what  
18 we are saying on behalf of Origin, *so it's up to Origin to make announcement regarding the  
19 timing of OM2 and of the licensed facility. That is not something that we comment on. Of  
20 course, we have our own experience with this how long these things take, so this is not  
21 something that is going to happen over the next few years, but this is probably going to take a  
bit longer, but that is up to them to make further announcements on...*

22 **Fernand de Boer:**

23 But for sure, it is EUR 12.5 million now coming in, and EUR 5 million already received and  
24 then EUR 7.5 million.

25 **Tom van Aken (CEO Avantium):**

26 Sure the EUR 7.5 million is related to entering into the technology license agreement. And then  
27 there will be other milestone payments related to other milestones that we will be pursuing. And  
28 I think that we have said in the past that typically these things are related to when you have done

1 the engineering, when you enter into construction, when you complete construction. So these are  
2 the type of milestones that you should be thinking of.

3 (Emphasis added).

4 189. Consistent with the immense work, plant redesign, and delays inherent with switching  
5 Origin's product focus to FDCA, on May 10, 2023, Origin provided an update on its agreement with  
6 Avantium indicating that Origin had not made any additional payments under the agreement in  
7 connection with the achievement of certain milestones for the Origin plant that would use Avantium's  
8 technology to produce FDCA.

9 190. On August 16, 2023, the CEO of Avantium held a Half-Year Results 2023 conference  
10 call with Analysts. During the call, the CEO was asked about the Origin 2 plant. The CEO stated that:  
11 "But of course, we are in continuous dialogue about how they're moving forward with that [Origin 2]  
12 facility. [Origin] ... has made statements about how they're going to be running their project in terms  
13 of phasing it in two different phases, but also with a very clear focus of OM2, towards FDCA and not  
14 towards bio-PET." [https://www.avantium.com/wp-content/uploads/2023/08/20230816-Avantium-  
15 Half-Year-Results-2023-Analyst-Call-Transcription.pdf](https://www.avantium.com/wp-content/uploads/2023/08/20230816-Avantium-Half-Year-Results-2023-Analyst-Call-Transcription.pdf)

16 191. Unlike the schedule for Origin 2 that the Avantium CEO indicated was unrealistic during  
17 the February 22, 2023 call, during the August 16, 2023 conference call, the Avantium CEO stated: "[i]  
18 is not up to us to comment about this because the execution is going to be done by Origin. But I think  
19 that in our own experience with the design and engineering of these plants, the structuring of these plants  
20 is very much aligned with the timeline that they have indicated last week. So, I think in that sense, their  
21 plan [for Origin 2] is pretty much in line with our own expectation and experience."

22 **C. The Pepsi Offtake Agreement Amendments Are Indicative of Scienter**

23 192. Pepsi is one of Origin's largest and most important partners. Pepsi is also a substantial  
24 investor in the Company, and formerly had representatives on Origin's Board of Directors.

25 193. To preserve this important business relationship, on May 9, 2023, Defendants amended  
26 an offtake agreement the Company entered into with Pepsi in 2018 to reflect what Defendants knew  
27 about Origin 2's schedule: that the Company would not meet the plant's schedule for construction in  
28 mid-2023 and would not be operational by mid-2025.

1           194. Under the Original Pepsi Agreement, Pepsi had a right to terminate if commercial  
2 operation of Origin 2 did not occur by June 30, 2025, or if product was not delivered from Origin 2 by  
3 December 31, 2026. The original June 30, 2025 deadline closely paralleled the timeline that the  
4 Company relatedly provided the market concerning Origin 2, before and during the Class Period.

5           195. However, the May 9, 2023 Pepsi Offtake Agreement Amendments extended the  
6 termination dates—giving Pepsi the right to terminate the agreement if commercial operation of Origin 2  
7 did not occur by June 30, 2026 or if product is not delivered by December 31, 2026.

8           196. While Origin did not explicitly disclose why the Pepsi Offtake Agreement was revised,  
9 the provisions of the original agreement (which the Company conspicuously did not include or make  
10 readily available when it disseminated the amendments to the market on May 10, 2023), make it clear.  
11 Origin was required to inform Pepsi if it obtained actual knowledge of a substantial likelihood that  
12 Origin 2's milestone dates in 2025 may not be met. In such an instance, if Origin failed to provide a  
13 reasonable estimate on Origin 2's new expected timeline or reach a new agreement with Pepsi, Pepsi  
14 had the option to terminate the agreement. Even if Pepsi didn't invoke its option, such a delay would  
15 cause the agreement to terminate automatically on June 30, 2025.

16           197. In light of these contractual obligations and Defendants' desire to maintain the  
17 Company's relationship with Pepsi, the postponement of Origin 2's schedule in the May 9, 2023  
18 amendments demonstrates that Defendants knew prior to May 9, 2023 that Origin 2 was experiencing  
19 delays, would not begin construction by mid-2023, and would not be operational by mid-2025.

20           198. The May 9, 2023 amendments also included enhanced mandates, requiring Origin to  
21 meet with Pepsi on at least a quarterly basis and discuss the Company's status on meeting Origin 2's  
22 new 2026 deadlines, indicating that Pepsi required more formalized updates with respect to Origin 2  
23 going forward.

24           199. The amendments also confirmed Defendants' knowledge that FDCA was no longer a  
25 mere consideration for Origin 2 but had been firmly incorporated into the plant's designs and future  
26 operation, as the amendments required the Company to provide Pepsi with pricing calculations and  
27 technical specifications for the FDCA to be produced at the plant either before or upon completing FID  
28 for the plant.

00813961;V1

1           200. Defendants knew by May 9, 2023 that FID, a critical step before Origin 2 construction  
2 can commence, was far off from being finalized. The Pepsi Offtake Agreement Amendments show that  
3 Origin had not provided Pepsi with Origin 2's FDCA's price, technical specifications, and production  
4 volume and accordingly, they knew that Origin 2's construction could not begin by the forecasted mid-  
5 2023 timeframe.

6           201. Despite amending its agreement with Pepsi to reflect the known delays with Origin 2, on  
7 May 10, 2023, Defendants represented to the market that Origin 2's front-end design and construction  
8 planning were "progressing." Then, on May 12, 2023, Defendants asserted that Origin 2 would only be  
9 producing PET and HTC, the plant's construction was expected to start by mid-2023, and the plant was  
10 expected to be operational in mid-2025.

11           202. In light of the Pepsi Offtake Agreement Amendments, by the time Origin announced its  
12 financial results for the first quarter of 2023 on May 10, 2023, Defendants knew that construction for  
13 Origin 2 was not beginning by mid-2023, the plant was not opening in mid-2025, and the production of  
14 FDCA had been incorporated into the designs for the plant.

15           203. Defendant Bissell later confirmed on August 9, 2023 that shifting to FDCA played a  
16 meaningful role in delaying Origin's timing in light of the extensive work required to prepare a new  
17 plant design and engineering assessment for Origin 2. Accordingly, Defendants further disclosed that  
18 day that FID for the revised Origin 2 could not be finalized until 2025.

19           **D. The Fraud Impacted Origin's Core Operations**

20           204. Defendants' false and misleading statements on Origin 2 concern critical aspects of the  
21 Company's core operations. The completion of Origin 2 is vital to Origin's financial success and proof  
22 of large commercial production of its touted technology.

23           205. From the onset of Origin going public, Origin 2 was expected to be the Company's largest  
24 manufacturing plant by a significant margin, supply most of the Company's products upon its  
25 completion from 2025-2027, and drive the Company generating positive EBITDA. (See ¶¶ 42, 44).

26           206. During a conference call on February 17, 2021 held in connection with the announcement  
27 of the Origin Merger, Defendant Riley stressed the importance of Origin 2 for the Company: "...Origin  
28 Two will be much larger than Origin One and our first commercial scale plant...In 2026, which is

00813961;V1

1 expected to be our first full year of full commercial scale operations we forecast revenue of \$830 million  
2 and EBITDA of \$296 million.” (See ¶ 45).

3 207. As late as the May 12, 2023 PowerPoint, Origin still required Origin 2 to generate the  
4 Company’s first year of positive year EBITDA in 2025.

5 208. During a conference call on August 12, 2021 to report the Company’s first quarterly  
6 earnings as a public company, Defendant Bissell emphasized that the Company’s leadership was closely  
7 monitoring Origin 2 and its construction timeline and costs, “[w]e are of course continually reviewing  
8 construction costs and timeline to assess macroeconomic perturbations such as inflation and supply  
9 chain disruption, we were pleased to reaffirm our previously disclosed expected capital budget and  
10 production timelines for Origin 1 and Origin 2.” (See ¶ 69).

11 209. Later during the call, Origin’s CFO, Nate Whaley, underscored the crucial role Origin 2  
12 would serve to the Company’s financial success, “[u]pon completion of Origin 1 and Origin 2, we expect  
13 beginning generating positive EBITDA and anticipate our business would generate sufficient cash to  
14 allow us to build Origin 3 and beyond. Hence, we do not anticipate needing to raise additional equity  
15 capital fund our current business or capital project needs.” (See ¶ 70).

16 210. Over the course of the next two years, through the end of the Class Period, the Individual  
17 Defendants provided extensive and regular updates on Origin 2’s planning and construction, expected  
18 cost, and product focus while reiterating they were closely monitoring the plant’s construction costs and  
19 timeline. (See ¶¶ 71-82, 115-142).

20 211. As the conversion of CMF to PX was the primary function for Origin 2, which was  
21 expected to be the Company’s largest and most important commercial operation, the Individual  
22 Defendants were aware of the chemistry and engineering complications causing the Company’s delays  
23 in completing FEL 2 for the plant in late 2022 and early 2023, as well as the Company’s status in meeting  
24 Origin 2’s planning and construction milestones. The Individual Defendants attended weekly and  
25 quarterly meetings in which the status of Origin 2’s development and product slate was discussed. (See  
26 ¶¶ 87-92).

1           212. Origin 2 was of such importance to the Company that the Individual Defendants were  
2 required to have knowledge during the Class Period of the plant's technical and engineering  
3 developments, status on meeting its forecasted construction milestones, and product focus.

4 **VIII. LOSS CAUSATION/ECONOMIC LOSS**

5           213. During the Class Period, as detailed herein, Origin's publicly traded securities were  
6 artificially inflated due to Defendants' false and misleading public statements. When Defendants' prior  
7 misrepresentations were disclosed and became apparent to the market, the price of Origin's publicly  
8 traded securities fell as the prior artificial inflation came out.

9           214. As a result of their purchases of Origin's publicly traded securities during the Class  
10 Period, Lead Plaintiff and the other Class members suffered economic loss, *i.e.*, damages, under the  
11 federal securities laws.

12           215. The declines in the price of Origin's publicly traded securities after the corrective  
13 disclosures on August 9, 2023 were a direct result of Defendants' misrepresentations and omissions  
14 being revealed to the market.

15           216. The corrective disclosure on August 9, 2023 revealed that Origin was significantly  
16 delaying the timeline for the construction of Origin 2, changing the product slate at the plant from a  
17 focus on PX to a focus on FDCA, reducing the plant's production capacity by half, greatly increasing  
18 the plant's cost, and delaying start-up and meaningful earnings therefrom for years.

19           217. Over the course of the next day, Origin's stock fell \$2.87 per share, or 66.5%, to close at  
20 \$1.46 per share on August 10, 2023.

21           218. The dramatic decline in the price of Origin securities after the corrective disclosure on  
22 August 9, 2023 was a direct result of Defendants' misrepresentations and omissions being revealed to  
23 investors and the market.

24           219. The adverse consequences of the Company's disclosures, including the decline in  
25 Origin's stock price, and the adverse impact of those circumstances on the Company's business going  
26 forward, were entirely foreseeable to Defendants at all relevant times. Defendants' conduct, as alleged  
27 herein, proximately caused foreseeable losses and damages to Lead Plaintiff and members of the Class.  
28

1           220. The timing and magnitude of the price decline in Origin's stock price negate any  
2 inference that the loss suffered by Lead Plaintiff and the other Class members was caused by changed  
3 market conditions, macroeconomic or industry factors or Company-specific facts unrelated to  
4 Defendants' statements.

5           221. Thus, the economic loss, *i.e.*, damages suffered by Lead Plaintiff and the other Class  
6 members, was a direct, foreseeable, and proximate result of the fraudulent scheme being revealed to  
7 investors and to the market.

8           222. The market's reaction following Origin's false and misleading statements also shows that  
9 investors were misled by the Company's misstatements.

10           223. On February 23, 2023, following the disclosure of the Company's materially misleading  
11 and false statements on Origin 2, Origin's stock price increased by \$0.13 to close at \$4.97 per share on  
12 February 24, 2023.

13           224. On March 7, 2023, following the disclosure of the Company's materially misleading and  
14 false statements on Origin 2, Origin's stock price increased by \$0.05 to close at \$4.47 per share on March  
15 8, 2023.

16           225. On May 11, 2023, following the disclosure of the Company's materially misleading and  
17 false statements on Origin 2, Origin's stock price increased by \$0.29 from the closing price of \$4.36 on  
18 May 10, 2023 to close at \$4.65 per share on May 11, 2023.

19           226. On May 12, 2023, following the disclosure of the Company's materially misleading and  
20 false statements on Origin 2, Origin's stock price dropped \$0.03 to close at \$4.70 on May 15, 2023, the  
21 next trading day, buoyed from a steeper decline by Defendants' false and misleading statements.

22           227. On May 22, 2023, following the disclosure of the Company's materially misleading and  
23 false statements on Origin 2, Origin's stock price dropped \$0.06 to close at \$4.55 per share on May 23,  
24 2023, the next trading day, buoyed from a steeper decline by Defendants' false and misleading  
25 statements.

26           228. On June 8, 2023, following the disclosure of the Company's materially misleading and  
27 false statements on Origin 2, Origin's stock price dropped \$0.09 to close at \$4.70 per share on June 9,  
28

1 2023, the next trading day, buoyed from a steeper decline by Defendants' false and misleading  
2 statements.

3 **IX. PRESUMPTION OF RELIANCE: FRAUD ON THE MARKET**

4 229. Lead Plaintiff is entitled to a presumption of reliance on Defendants' misrepresentations  
5 of material facts and omissions pursuant to the fraud-on-the-market doctrine.

6 230. At all relevant times, the market for Origin's publicly traded securities was an efficient  
7 market for the following reasons, among others:

- 8 a. Origin met the requirements for listing, and was listed and actively traded on the  
9 NASDAQ, a highly efficient market;
- 10 b. as a regulated issuer, Origin filed periodic public reports with the SEC;
- 11 c. Origin regularly communicated with public investors via means of established market  
12 communication mechanisms, including through regular dissemination of press releases  
13 on the nation's newswire services and through other wide-ranging public disclosures,  
14 such as communications with the financial press, securities analysts, and other similar  
15 reporting services;
- 16 d. Origin was followed by numerous securities analysts employed by brokerage firms who  
17 wrote reports about the Company, and these reports were distributed to the sales force  
18 and certain customers of their respective brokerage firms. These reports were publicly  
19 available and entered the public marketplace; and
- 20 e. the market for Origin securities promptly digested current information regarding Origin  
21 from all publicly available sources and reflected such information in Origin's share price.

22 231. All purchasers of Origin's publicly traded securities during the Class Period relied on the  
23 same information disseminated by Defendants as reflected in the market price of Origin's publicly traded  
24 securities and suffered similar injury through their purchases at artificially inflated prices.

25 **X. CLASS ACTION ALLEGATIONS**

26 232. Lead Plaintiff brings this action as a class action pursuant to Rules 23(a) and (b)(3) of  
27 the Federal Rules of Civil Procedure on behalf of all persons and entities that purchased Origin's  
28

1 publicly traded securities on the open market of a U.S. stock exchange during the Class Period, February  
2 23, 2023 through August 9, 2023, inclusive, and were damaged thereby. Excluded from the Class are  
3 (a) Defendants; (b) members of the immediate family of each Individual Defendant; (c) any person who  
4 was an officer or director of the Company, at all relevant times; (d) any firm, trust, corporation, officer,  
5 or other entity in which any Defendant has or had a controlling interest; (e) any person who participated  
6 in the wrongdoing alleged herein; and (f) the legal representatives, heirs, agents, affiliates, beneficiaries,  
7 successors-in-interest, or assigns of any such excluded party.

8 233. The members of the Class are so numerous that joinder of all members is impracticable.  
9 The disposition of their claims in a class action will provide substantial benefits to the parties and the  
10 Court. Throughout the Class Period, Origin's publicly traded securities were actively traded on the  
11 NASDAQ. While the exact number of Class members is unknown to Lead Plaintiff at this time and can  
12 only be ascertained through appropriate discovery, Lead Plaintiff believes that there are at least hundreds  
13 or thousands of members in the proposed Class. Thousands of shares of Origin's publicly traded  
14 securities were traded publicly during the Class Period on the NASDAQ. Record owners and other  
15 members of the Class may be identified from records maintained by Origin or its transfer agent and may  
16 be notified of the pendency of this action by mail, using the form of notice similar to that customarily  
17 used in securities class actions.

18 234. Lead Plaintiff's claims are typical of the claims of the members of the Class as all  
19 members of the Class are similarly affected by Defendants' wrongful conduct in violation of federal law  
20 that is complained of herein.

21 235. Lead Plaintiff will fairly and adequately protect the interests of the members of the Class  
22 and have retained counsel competent and experienced in class and securities litigation. Lead Plaintiff  
23 has no interests that conflict with those of the Class.

24 236. Common questions of law and fact exist as to all members of the Class and predominate  
25 over any questions solely affecting individual members of the Class. The questions of law and fact  
26 common to the Class include: (1) whether Defendants violated the Exchange Act; (2) whether  
27 Defendants issued false or misleading statements; and (3) the extent to which members of the Class have  
28 sustained damages.

1 237. A class action is superior to all other available methods for the fair and efficient  
2 adjudication of this controversy because, among other things, joinder of all members of the Class is  
3 impracticable. Furthermore, as the damages suffered by individual Class members may be relatively  
4 small, the expense and burden of individual litigation makes it impossible for members of the Class to  
5 individually redress the wrongs done to them.

6 238. There will be no difficulty in the management of this action as a class action.

7 **COUNT I**

8 **FOR VIOLATIONS OF SECTION 10(B) OF THE EXCHANGE ACT**  
9 **AND RULE 10B-5(B) PROMULGATED THEREUNDER**  
10 **(AGAINST THE COMPANY AND INDIVIDUAL DEFENDANTS)**

11 239. Lead Plaintiff repeats and re-alleges each and every allegation contained above as if fully  
12 set forth herein and further alleges as follows:

13 240. This Count is asserted pursuant to Section 10(b) of the Exchange Act and Rule 10b-5(b)  
14 promulgated thereunder by the SEC, on behalf of Lead Plaintiff and members of the Class against the  
15 Company and the Individual Defendants.

16 241. During the Class Period, the Company and the Individual Defendants carried out a plan,  
17 scheme and course of conduct which was intended to and, throughout the Class Period, did: (a) deceive  
18 the investing public, including Lead Plaintiff and other Class members, as alleged herein; and (b) cause  
19 Lead Plaintiff and other members of the Class to purchase Origin's publicly traded securities at  
20 artificially inflated prices. In furtherance of this unlawful scheme, plan and course of conduct,  
21 Defendants, and each Individual Defendant, took the actions set forth herein.

22 242. The Company and the Individual Defendants made untrue statements of material fact  
23 and/or omitted to state material facts necessary to make the statements not misleading upon the  
24 purchasers of the Company's publicly traded securities in an effort to maintain artificially high market  
25 prices for Origin's publicly traded securities in violation of Section 10(b) of the Exchange Act and Rule  
26 10b-5(b) promulgated thereunder. All Defendants are sued either as primary participants in the wrongful  
27 and illegal conduct charged herein or as controlling persons as alleged below.

1           243. The Company and Individual Defendants, individually and in concert, directly and  
2 indirectly, by the use, means or instrumentalities of interstate commerce and/or of the mails, engaged  
3 and participated in a continuous course of conduct to conceal adverse material information about  
4 Origin's financial well-being, operations, and prospects, as specified herein.

5           244. During the Class Period, the Company and the Individual Defendants made the false  
6 statements specified above, which they knew or recklessly disregarded to be false and misleading in that  
7 they contained misrepresentations and failed to disclose material facts necessary in order to make the  
8 statements made, in light of the circumstances under which they were made, not misleading.

9           245. The Company and the Individual Defendants had actual knowledge of the  
10 misrepresentations and omissions of material fact set forth herein, or recklessly disregarded the true  
11 facts that were available to them. The Company and the Individual Defendants engaged in this  
12 misconduct to conceal Origin's true condition from the investing public and to support the artificially  
13 inflated prices of the Company's publicly traded securities.

14           246. As a result of the dissemination of the materially false and/or misleading information  
15 and/or failure to disclose material facts, as set forth above, the market price of Origin's publicly traded  
16 securities was artificially inflated during the Class Period. In ignorance of the fact that market prices of  
17 the Company's securities were artificially inflated, and relying directly or indirectly on the false and  
18 misleading statements made by Defendants, or upon the integrity of the market in which the securities  
19 trades, and/or in the absence of material adverse information that was known to or recklessly disregarded  
20 by Defendants, but not disclosed in public statements by Defendants during the Class Period, Lead  
21 Plaintiff and the other members of the Class purchased Origin securities during the Class Period at  
22 artificially high prices and were damaged thereby.

23           247. Lead Plaintiff and the Class would not have purchased the Company's publicly traded  
24 securities at the prices they paid, or at all, had they been aware that the market prices for Origin's  
25 publicly traded securities had been artificially inflated by the Company and the Individual Defendants'  
26 fraudulent course of conduct.

27           248. As a direct and proximate result of the Company's and the Individual Defendants'  
28 wrongful conduct, Lead Plaintiff and the other members of the Class suffered damages in connection

1 with their respective purchases and sales of the Company's publicly traded securities during the Class  
2 Period.

3 249. By virtue of the foregoing, the Company and the Individual Defendants violated Section  
4 10(b) of the Exchange Act and Rule 10b-5(b) promulgated thereunder.

5 **COUNT II**

6 **FOR VIOLATIONS OF SECTION 20(A) OF THE EXCHANGE ACT**  
7 **(AGAINST THE INDIVIDUAL DEFENDANTS)**

8 250. Lead Plaintiff repeats and re-alleges each and every allegation contained above as if fully  
9 set forth herein and further alleges as follows:

10 251. This Count is asserted pursuant to Section 20(a) of the Exchange Act against the  
11 Individual Defendants on behalf of Lead Plaintiff and members of the Class.

12 252. As alleged above, Origin is liable to Lead Plaintiff and members of the Class based on  
13 the materially false and misleading statements and omissions as set forth above, pursuant to Section  
14 10(b) of the Exchange Act.

15 253. Throughout the Class Period, the Individual Defendants were controlling persons of  
16 Origin within the meaning of Section 20(a) of the Exchange Act as alleged herein, and culpable  
17 participants in the fraud alleged herein.

18 254. By virtue of their high-level positions and their ownership and contractual rights,  
19 participation in, and/or awareness of the Company's operations and intimate knowledge of the  
20 Company's accounting and actual performance, the Individual Defendants had the power to influence  
21 and control and did influence and control, directly or indirectly, the decision-making of the Company,  
22 including the content and dissemination of the various statements which Lead Plaintiff contends are  
23 false and misleading. The Individual Defendants were provided with or had unlimited access to copies  
24 of the Company's financial statements, reports, press releases, public filings, and other statements  
25 alleged by Lead Plaintiff to be misleading prior to and/or shortly after these statements were issued and  
26 had the ability to prevent the issuance of the statements or cause the statements to be corrected.  
27  
28

1           255. In particular, the Individual Defendants had direct and supervisory involvement in the  
2 day-to-day operations of the Company and, therefore, had the power to control or influence, the  
3 decision-making of Origin, including the content of its financial statements and other public statements.

4           256. Given their individual and collective responsibilities for managing Origin throughout the  
5 Class Period, the Individual Defendants were regularly presented to the market as the individuals  
6 responsible for the Company's day-to-day business and operations, as well as its strategic direction.

7           257. As set forth above, the Individual Defendants acted knowingly and intentionally, or in  
8 such a deliberately reckless manner as to constitute willful fraud and deceit upon Lead Plaintiff and  
9 other members of the Class who purchased Origin's publicly traded securities stock during the Class  
10 Period.

11           258. Each of the Individual Defendants culpably participated in some meaningful sense in the  
12 fraud alleged herein. By reason of the foregoing, and by virtue of their position as controlling persons,  
13 the Individual Defendants are liable to Lead Plaintiff and members of the Class for violations of Section  
14 20(a) of the Exchange Act.

15 **XI. PRAYER FOR RELIEF**

16           WHEREFORE, Lead Plaintiff prays for relief and judgment, as follows:

17           (A) Determining that this action is a proper class action and certifying Lead Plaintiff as a  
18 class representative under Rule 23 of the Federal Rules of Civil Procedure;

19           (B) Awarding damages in favor of Lead Plaintiff and the other Class members against all  
20 Defendants, jointly and severally, for all damages sustained as a result of Defendants' violations of the  
21 Exchange Act, in an amount to be proven at trial, including prejudgment and post-judgment interest  
22 thereon;

23           (C) Awarding Lead Plaintiff and the Class their reasonable costs and expenses incurred in  
24 this action, including counsel fees and expert fees; and

25           (D) Granting such other and further relief as the Court deems just and proper.

26 **XII. JURY TRIAL DEMANDED**

27           Lead Plaintiff hereby demands a trial by jury.  
28

00813961;V1

1 DATED: November 18, 2024

Respectfully submitted,

2 /s/ Marion C. Passmore, Esq.

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