



## Company Overview

The world's leading carbon negative materials company

*May 12, 2023*

# Forward looking statements and disclaimers

## FORWARD-LOOKING STATEMENTS

This presentation and the accompanying oral presentation have been prepared by Origin Materials, Inc. ("Origin") for informational purposes only and not for any other purpose. Certain statements included in this presentation that are not historical facts are forward-looking statements for purposes of the safe harbor provisions under the United States Private Securities Litigation Reform Act of 1995. Forward-looking statements generally are accompanied by words such as "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "expect," "should," "would," "plan," "predict," "potential," "seem," "seek," "future," "outlook," and similar expressions that predict or indicate future events or trends or that are not statements of historical matters. These forward-looking statements include, but are not limited to, statements regarding Origin's business strategy, ability to convert capacity reservations and offtake agreements into revenue, ability to enter new end-markets, ability to develop new product categories, estimated total addressable market, anticipated synergies from partnerships, anticipated regulatory impacts, access to financing sources, budget and timelines for Origin 1, Origin 2, Origin 3 and future plants, anticipated production volume, design of future studies, anticipated benefits of our potential products, commercial and operating plans, product development plans, anticipated growth and projected financial information. These statements are based on various assumptions, whether or not identified in this presentation, and on the current plans, objectives, estimates, expectations and intentions of the management of Origin and are not predictions of actual performance and inherently involve significant risks and uncertainties. These forward-looking statements are provided for illustrative purposes only and are not intended to serve as, and must not be relied on as, a guarantee, an assurance, a prediction, or a definitive statement of fact or probability. Actual events and circumstances are difficult or impossible to predict and will differ from assumptions. Many actual events and circumstances are beyond the control of Origin. These forward-looking statements are subject to a number of risks and uncertainties, including that Origin may be unable to successfully commercialize its products; the effects of competition on Origin's business; the uncertainty of the projected financial information with respect to Origin; disruptions and other impacts to Origin's business as a result of outbreaks such as the COVID-19 pandemic, Russia's military intervention in Ukraine, the impact of severe weather events, and other global health or economic crises; changes in customer demand; and those factors discussed in the Quarterly Report on Form 10-Q filed with the U.S. Securities and Exchange Commission ("SEC") on May 10, 2023, under the heading "Risk Factors," and other documents Origin has filed, or will file, with the SEC. These filings, when available, are available on the investor relations section of our website at [investors.originmaterials.com](https://investors.originmaterials.com) and on the SEC's website at [www.sec.gov](https://www.sec.gov). If any of these risks materialize or our assumptions prove incorrect, actual results could differ materially from the results implied by these forward-looking statements. There may be additional risks of which Origin does not presently know, or that Origin currently believes are immaterial, that could also cause actual results to differ from those contained in the forward-looking statements. In addition, forward-looking statements reflect Origin's expectations, plans, or forecasts of future events and views as of the date of this presentation. Origin anticipates that subsequent events and developments will cause its assessments to change. However, while Origin may elect to update these forward-looking statements at some point in the future, Origin specifically disclaims any obligation to do so except as required under applicable law. These forward-looking statements should not be relied upon as representing Origin's assessments of any date subsequent to the date of this presentation. Accordingly, undue reliance should not be placed upon the forward-looking statements.

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## FINANCIAL INFORMATION; NON-GAAP FINANCIAL MEASURES

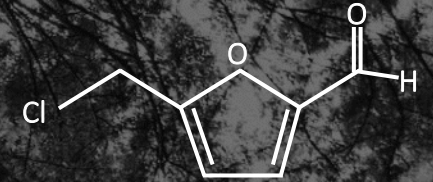
The financial information and data contained in this presentation are unaudited and do not conform to Regulation S-X. Accordingly, such information and data may not be included, may be adjusted or may be presented differently in any document to be filed or furnished by Origin with the SEC. In addition to financial measures included in this presentation that are calculated in accordance with generally accepted accounting principles in the United States ("GAAP"), this presentation contains non-GAAP financial measures. Origin believes these non-GAAP financial measures provide useful information to management and investors regarding certain financial and business trends relating to Origin's financial condition and results of operations. Origin does not place undue reliance on these non-GAAP financial measures, and they should not be considered as substitutes for other measures of financial condition and results of operations reported in accordance with GAAP.

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# Origin Materials – At a Glance

The world's leading carbon negative materials company



## Disruptive Materials Technology Company



Origin produces low and negative carbon materials

## Decarbonizing Platform Technology



Enables customers' net-zero commitments

## Enormous TAM

~\$1+ Trillion

\$390Bn near-term focus in polyesters; \$750Bn across broad range of materials

## Cost advantaged



Timber feedstocks are competitive with oil and ~10x cheaper than bio alternatives

## Global Fortune 500 Customers & Investors<sup>1</sup>



## Strong Customer Demand<sup>2</sup>

>\$9.3Bn<sup>3</sup>

from a diverse mix of industries

## Protected & Validated Technology

28 Patent Families<sup>3</sup>

Core technology protected in key countries

## Cash on hand<sup>4</sup>

\$264 Mn

Origin expected to be fully financed until EBITDA positive with anticipated financing, grants, and potentially strategic partnerships

1. Denotes ownership by PepsiCo, Danone and Nestle prior to business combination with Artius Acquisition, Inc.  
2. Figures assume maximum offtake amounts and exercise of full capacity reservations. Refer to slide 36 for additional detail.  
3. As previously reported in the Q4 2022 Earnings Presentation of Origin Materials, Inc. dated February 23, 2023.  
4. As of March 31, 2023. Represents cash, cash equivalents, restricted cash, and marketable securities. Refer to slide 56 for additional detail.  
As previously reported on Origin's Form 8-K filed on August 12, 2021, except where otherwise noted.  
Source: Origin Materials.

# Leading institutions are committing to a net zero future

The global industrial complex is committed to decarbonization

2030



**Patagonia**  
Carbon neutral by 2025



**Proctor & Gamble**  
Net zero between 2020 – 2030

**SIEMENS**

**Siemens**  
Net zero by 2030



**LG**  
Carbon neutral by 2030



**IKEA**  
Carbon negative by 2030



**Microsoft**  
Carbon negative by 2030



**Unilever**  
Carbon neutral before 2030

2030-2040



**AT&T**  
Net zero by 2035



**Walmart**  
Net zero by 2040



**PepsiCo**  
Net zero by 2040



**Amazon**  
Net zero by 2040



**Mercedes Benz**  
Net zero by 2040



**Best Buy**  
Net zero by 2040



**General Motors**  
Carbon neutral by 2040

2040 - 2050



**Michelin**  
Net zero by 2050



**BP**  
Net zero by 2050



**Danone**  
Net zero by 2050



**Ford**  
Net zero by 2050



**Nestlé**  
Net zero by 2050



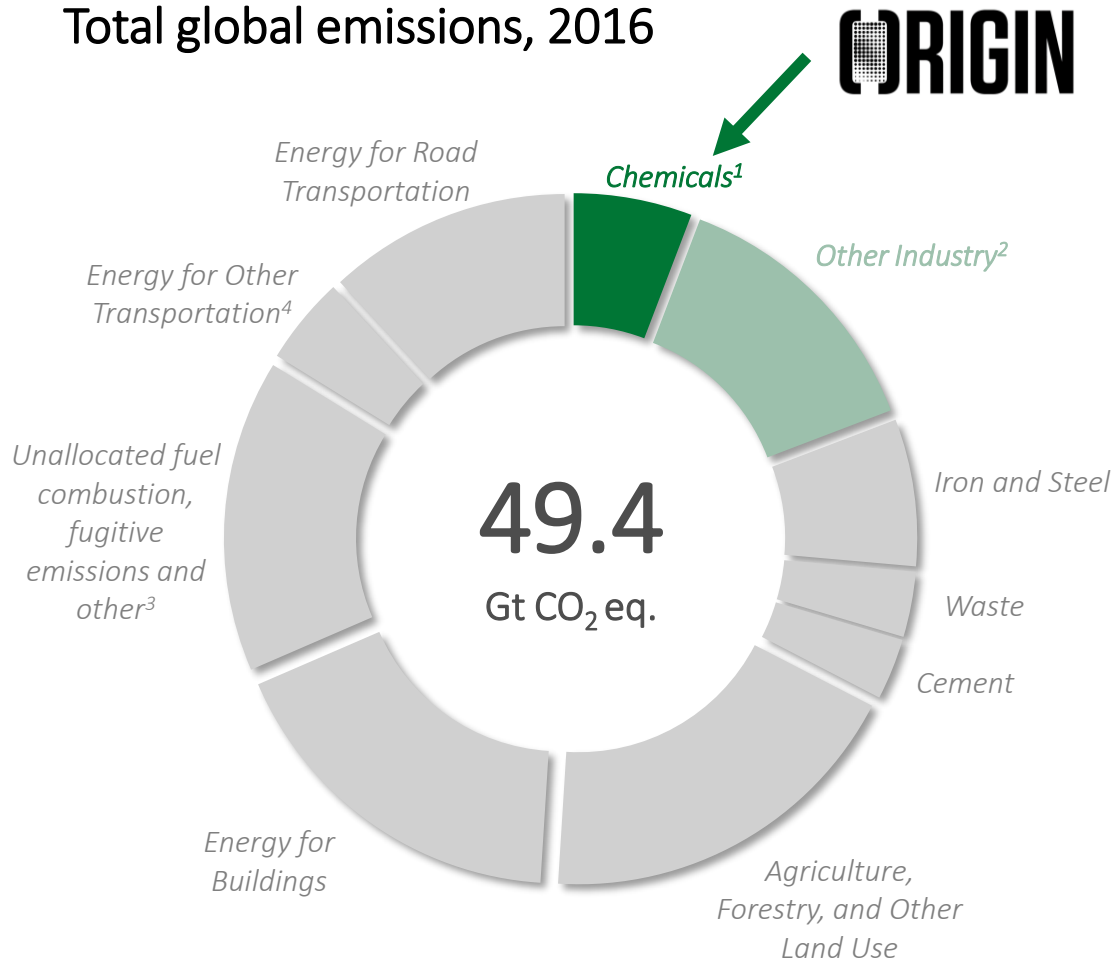
**Nike**  
Net zero by 2050



**Shell**  
Net zero by 2050

# Nearly half of all global emissions come from making products

Total global emissions, 2016



# Origin's mission is to enable the world's transition to sustainable materials

Fossil-based



**10.6Mn**

Daily barrels of oil consumed by the chemicals market

Sustainable-based



**<1%**

Of annually available 900Mn tons of forest residue and wood waste

Emitting



**2.78kg**

Carbon emissions per kg of fossil-based PET produced

Avoiding



**>100%**

Carbon reduction for Origin's PET vs. fossil-based PET

**The Origin platform can replace oil as the foundational feedstock for the materials economy**

1. Includes energy-related emissions from the manufacturing of chemicals as well as direct industrial process. 2. Includes energy-related emissions in mining and quarrying, construction, textiles, machinery, food and tobacco, paper & pulp and other industries. 3. Includes energy-related emissions from the use of machinery in agriculture and fishing. 4. Includes energy-related emissions in aviation, shipping, rail and pipeline transportation.

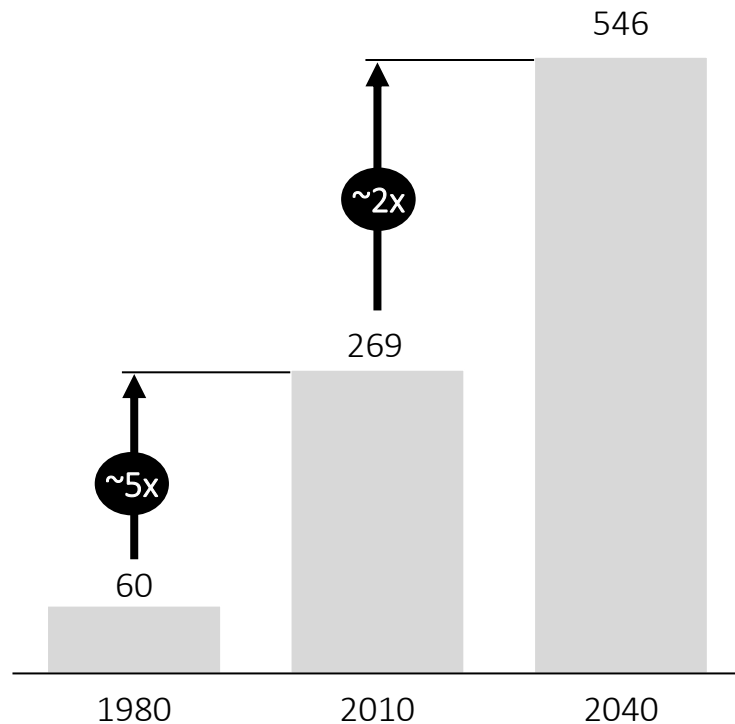
Source: Origin Materials estimates, Climate Watch, the World Resources Institute (2020), ourworldindata.org.

As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Ubiquitous plastics are a prime target to begin reducing carbon emissions

## Plastics enable modern life...

Million tons



## ... but we need better, scalable solutions



### Drop-in ready – change only happens at scale

Transforming the materials economy won't happen in niche markets. Plastics permeate every sector and Origin's products are supply-chain ready alternatives for fossil-based feedstocks



### Negative-to-low carbon

Sustainably harvested, renewable feedstocks (e.g., forest waste / residues) can convert naturally captured carbon into useable end products



### Sustainable, end of life solutions (recycle first)


Responsible plastics use goes from 'cradle to grave'. Enabling the circular economy through high rates of recycling is a must for any solution

# The Origin platform: 'Once in a planet' shift from fossil to decarbonized materials

Abundant, low-cost, bio-feedstocks



Origin Core Technology



- ✓ Carbon Negative
- ✓ Flexible
- ✓ Lowest Cost, Beats Petroleum

"CMF"  
5-Chloro-methyl-furfural

ClCC1=CC=C(C=O)O1





"HTC"  
Hydrothermal Carbon

C

"Oils & Extractives"<sup>1</sup>

Countless products can be manufactured using Origin's carbon negative materials...

NOT EXHAUSTIVE

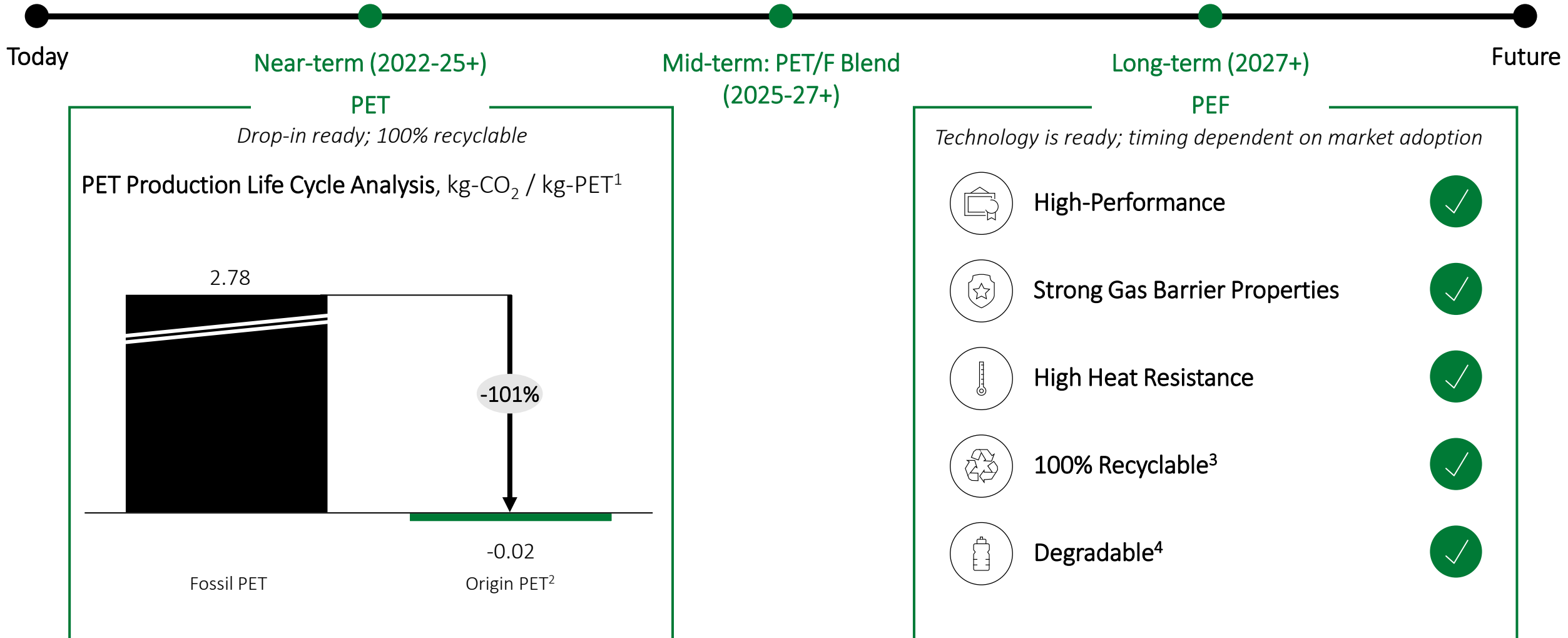
- Textiles and fabrics 
- Next-gen packaging 
- Paints, coatings, and epoxies
- Filler for tires and more 
- Solid fuels
- Agriculture & soil products 
- Liquid bio-fuels<sup>1</sup>

Source: Origin Materials.

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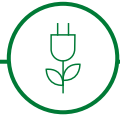
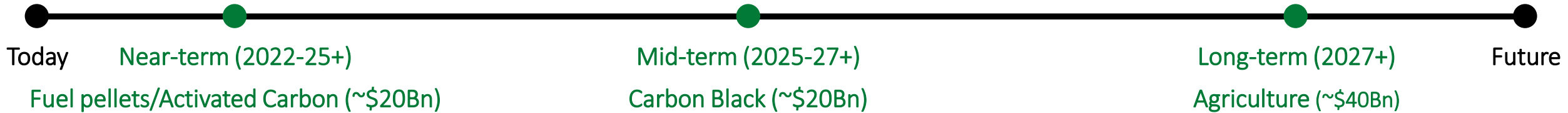
# Origin's CMF is a carbon negative solution for recyclability and degradability



1. Process step carbon impacts are derived from Deloitte ISO compliant LCA report. Deviations from supply chain described in LCA report may affect carbon impacts. 2. Southern Pine based bio-PET. 3. PEF can be recycled by the same mechanical methods used for PET. Currently there are no independent PEF recycling stream or U.S. guidelines for blending PEF and PET streams. 4. PEF degradation time in industrial composting conditions (58 °C) range from 7 to 13 months to 90% degradation, depending on conditions, according to "First Results Accelerated Tests Biodegradation of PEF," Organic Waste Systems (OWS), Gent, Belgium.  
 Source: Origin Materials. As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.



# Origin's HTC is a diverse, high-potential carbon negative platform material



A drop-in ready, energy dense, fuel alternative

**Net 0** Carbon footprint

**>7%** Annual growth rate of fuel pellet market

A carbon negative solution for food and water treatment

**~500 - 3,000** m<sup>2</sup>/g – Ultra high surface area

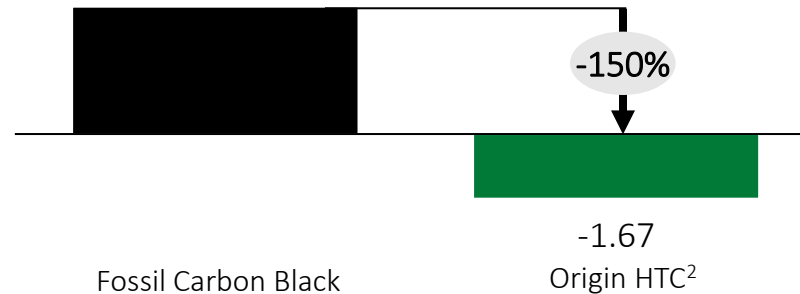
**>8%** Annual growth rate of activated carbon market



A carbon negative carbon black replacement for tires, foams, and dyes

**No Detectable Carcinogens<sup>1</sup>**

Carbon Black Production Life Cycle Analysis, kg-CO<sub>2</sub> / kg-Carbon Black



A next-generation agriculture additive to improve farming efficiency

### Key Properties

- Porous, High Surface Area
- Available Water Capacity
- High Cation Exchange

### Applications

- Biochar, slow-release fertilizer, microbes / biologics, soil amendment

1. Origin carbon black does not contain any PAH, or polyaromatic hydrocarbons, which are carcinogens found in fossil carbon black.  
 2. Derived from Deloitte ISO compliant LCA report. Deviations from supply chain described in LCA report may affect carbon impacts.  
 Source: Origin Materials, PBL Netherlands Environmental Assessment Agency.  
 As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Origin is exploring biofuel production from an “oils and extractives” stream co-produced with CMF and HTC and not included in previous plans

Cellulose-derived biofuel for aviation, renewable diesel, and marine fuel

- Biofuels market is \$110 billion to \$130 billion, estimated to grow to \$200 billion by 2030<sup>1</sup>
- Today biofuels are made mostly from food or food-derived sources (soy, used cooking oil, tallow, etc.)
- Cellulosic biofuels or bio-intermediates made from wood waste are highly sought after and represent the future of biofuels. Unlike food-derived biofuels, cellulose-derived biofuels do not compete with land for growing food and “let food be food”
- Origin is uniquely positioned to deliver these renewable fuels using a third intermediate stream, “oils and extractives,” which is co-produced alongside CMF and HTC and which has not been included in previous plans
- Potential applications include transport/marine fuel, industrial, and heat and power
- Preliminary discussions with multiple potential strategic partners

## Intermediate Streams

“CMF”  
5-Chloro-methyl-furfural

“HTC”  
Hydrothermal carbon

“Oils &  
Extractives”

## Potential Biofuels

Transport /  
Marine Fuel

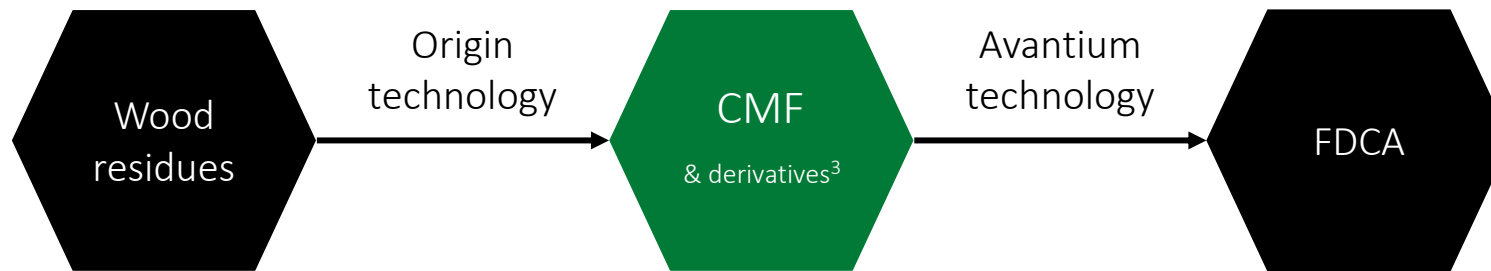
Industrial

Heat and  
Power

# Origin and Avantium to accelerate mass production of FDCA and PEF for advanced chemicals and plastics

Complementary technologies represent potential breakthrough in the commercialization of next-generation materials

- Origin's existing patented carbon-negative technology platform would convert wood residues into the building block chemical CMF and its derivatives. Avantium's process technology can be used to convert derivatives of Origin's CMF into FDCA, the chemical building block for the polymer PEF
- The produced PEF is expected to be a performance-advantaged alternative to PET, 100% plant-based, fully recyclable<sup>1</sup>, have attractive unit economics, and to offer a significantly reduced carbon footprint, improved degradability<sup>2</sup>, and superior strength, thermal properties, and barrier properties
- PEF could replace glass and aluminum, offering superior break protection and inexpensive light-weighting for shipping, making it well-suited for oxygen-sensitive products like carbonated soft drinks, protein shakes, and teas
- FDCA applications include a wide range of polyesters, polyamides, polyurethanes, coating resins, and plasticizers
- To accelerate commercialization, partnership includes a licensing agreement providing Origin with access to Avantium's process technology for producing FDCA and a conditional offtake agreement under which Avantium will supply Origin with FDCA and PEF
- Materials are expected to be sold to future customers while Origin incorporates Avantium's process technology into the supply chain. This allows Origin to start market development for PEF during its plant construction phase



Complementary technologies aim to accelerate the mass production of FDCA and PEF

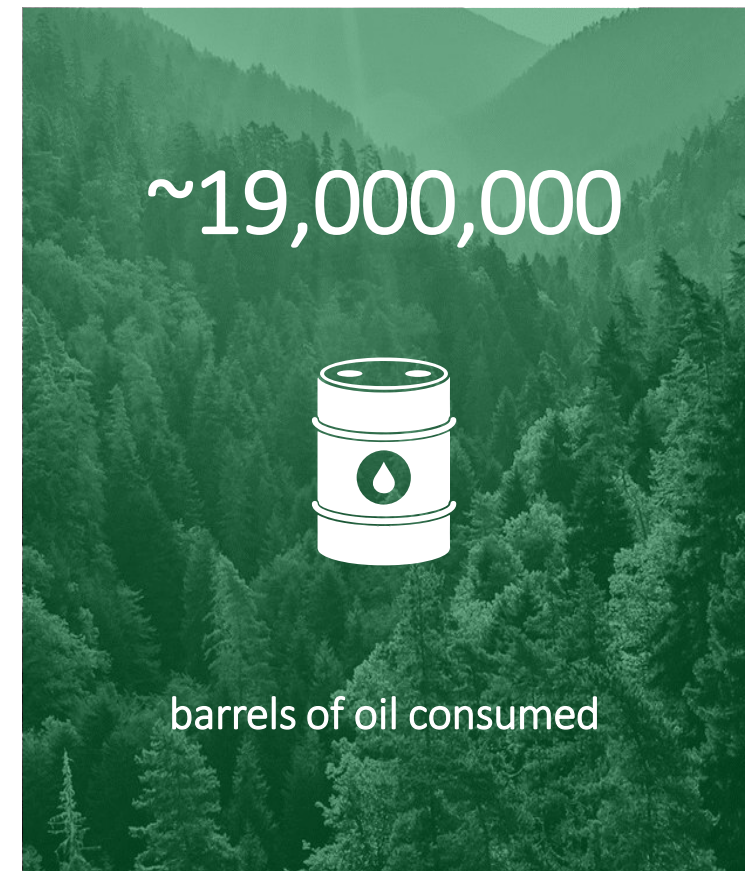
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2. PEF degradation time in industrial composting conditions (58 °C) range from 7 to 13 months to 90% degradation, depending on conditions, according to "First Results Accelerated Tests Biodegradation of PEF," Organic Waste Systems (OWS), Gent, Belgium. 3. Derivatives such as MF, or methyl furfural, and others.

As previously reported in the Q4 2022 Earnings Presentation of Origin Materials, Inc. dated February 23, 2023.

# Origin's platform technology decarbonization impact

By 2030, Origin's operating plants are expected to annually avoid  $\sim 8.3\text{MMT}^1 \text{CO}_2$  equivalent to approximately...



1. Million Metric Tons.



Source: Origin Materials calculations based on 6 commercial scale plants and plant life cycle impact estimates. U.S. Environmental Protection Agency greenhouse gas equivalencies calculation:

<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

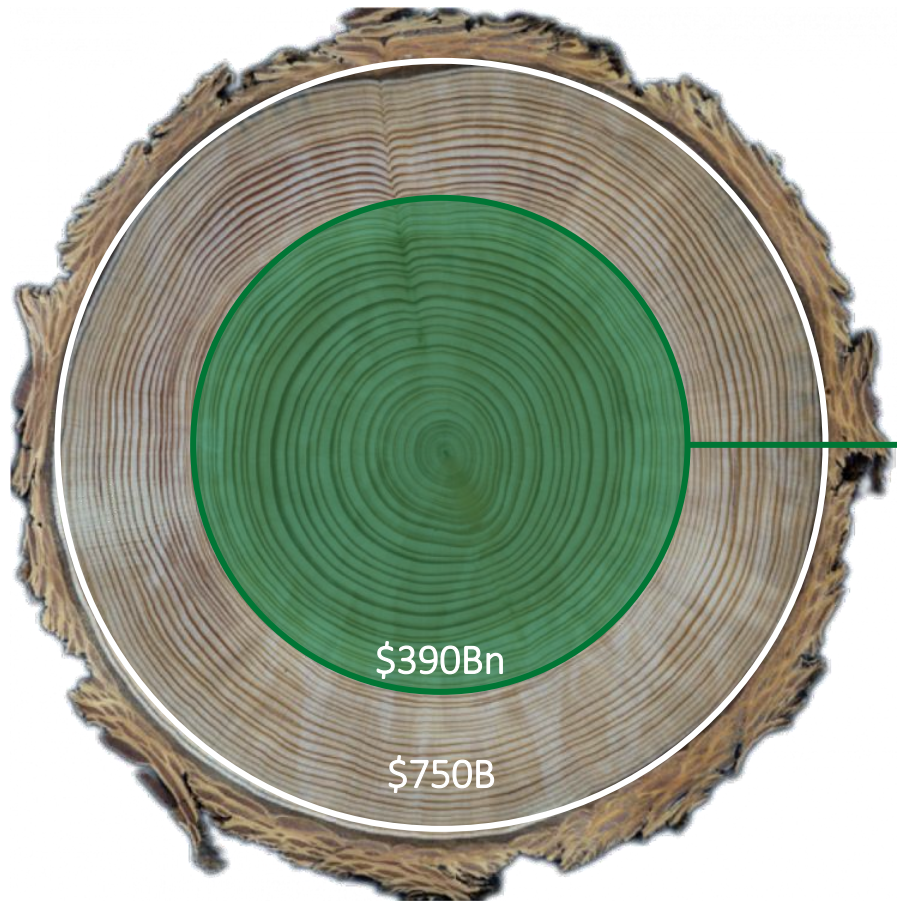
As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Estimated total addressable market for Origin products is more than \$1Trn

Origin addresses a growing market with broad applications



 HTC market  CMF market

Cumulative TAM = >\$1Trn



Markets	Market Size
	\$





PET Fiber	~\$175Bn
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-  Apparel
-  Carpet

PET Resin	~\$145Bn
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-  Food and beverage packaging

Carbon	~\$70Bn
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-  Tires
-  Activated Carbon
-  Foams
-  Fuel pellets

Near term focus pre-2030  
>\$390Bn market



Near-term focus TAM is expected to grow by ~\$15Bn annually

# Estimated total addressable market for Origin products is more than \$1Trn

Origin addresses a growing market with broad applications

Cumulative TAM = >\$1Trn



Select Markets | Market Size  
\$



Paints & Coatings | ~\$30Bn

 Colorants

Soil Additives | ~\$40Bn

 Soil Nutrients

PEF | ~\$225Bn

 Apparel  PET Applications

 Packaging



Epoxies | ~\$15Bn

 Adhesives

 Coatings

Plasticizers | ~\$18Bn

 PVC Piping

 HTC market  CMF market

Long term focus post-2030

>\$750Bn market



# Origin is supported by Global Fortune 500 companies

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By Waqas Qureshi 10 September 2018

## PepsiCo joins Danone and Nestlé Waters in bio-based bottles R&D partnership

PepsiCo has joined the NaturALL Bottle Alliance, which is conducting an R&D partnership to develop 100% bio-based bottles.



We believe total estimated plastics demand from these three customers represents...

4.75Mn  
Tons

~20  
Commercial facilities  
required to meet PET  
demand<sup>1</sup>

1. Illustrative opportunity from fulfilling estimated PET portion of PepsiCo, Danone, and Nestlé Waters combined annual consumption of 4.75 million tons of plastics / year.

Source: Company websites; Origin Materials management estimates.

As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Origin has earned prestigious awards and certifications for innovation



Origin Materials Wins EPA Green Chemistry Challenge Award for 2022 in Partnership with University of California, Davis



Origin Materials Earns USDA Certified Biobased Product Label for Carbon Negative Materials, 2021 and 2022



Origin Materials Recognized by Chemical Week for Best Sustainable Product by an Emerging Company 2021



Origin Materials Named to Fast Company's Annual List of the World's Most Innovative Companies for 2022 in Manufacturing



# AECI SANS Technical Fibers Partnership



**“Origin Materials and AECI SANS Technical Fibers to Develop Carbon-Negative Materials for Apparel and Automotive Applications” – April 5, 2021**

- AECI SANS Technical Fibers is a leader in engineered thread for high-performance apparel and automotive applications
- Expands existing joint development agreement in order to develop high-performance fibers for diverse thread applications serving the apparel, footwear and automotive industries
- AECI SANS Technical Fibers signed a capacity reservation agreement for carbon-negative PET and next-generation polymers produced using the Origin platform



# AECI Much Asphalt Partnership



## “Origin Materials and AECI Much Asphalt to Develop Low-Carbon Asphalt” – April 6, 2021

- AECI Much Asphalt is the largest commercial asphalt producer in southern Africa
- Region’s leading manufacturer and supplier of hot and cold mix asphalt products, and a manufacturer, supplier and applicator of bituminous road binders, emulsions, primes, pre-coats and modified binders
- The collaboration is expected to create substantial value in the developing African market, where AECI Much Asphalt is currently active



# Packaging Matters Partnership



**“Origin Materials and Packaging Matters Launch Partnership to Develop Advanced Carbon-Negative Packaging Solutions, Building on Existing 10-Year Supply Agreement”** – April 12, 2021

- Packaging Matters is a leader in packaging innovation with several Fortune 100 food companies as customers
- Development work to produce advanced packaging materials, including PEF
- Packaging Matters will transition its virgin petroleum-based PET purchases to sustainable carbon-negative PET from Origin Materials.
- As the companies make progress on developing PEF applications, some or potentially all of the supply is expected to transition to PEF
- 40+ years PET experience
- 3 manufacturing facilities in the United States



# PrimaLoft Partnership



**“Origin Materials and PrimaLoft Form Strategic Alliance to Develop Carbon-Negative Insulating Fiber for Outdoor Gear, Bedding, and Apparel”** – April 19, 2021

- PrimaLoft is advanced material technology company and a world leader in the development of high-performance insulations and fabrics
- Launched strategic alliance to develop high-performance, carbon-negative insulating fibers for diverse apparel applications, including for leading outdoor, fashion, and lifestyle brands, plus home goods applications such as hypoallergenic insulated bedding
- Signed capacity reservation agreement for carbon-negative PET produced using the Origin Materials technology platform
- Fibers to address demand for sustainable, high-performance materials from over 900 global brand partners
- PrimaLoft iconic brand partners include Patagonia, Stone Island, L.L. Bean, Lululemon, adidas and Nike



# Solvay Partnership



## Solvay and Origin Materials to Develop Advanced Carbon-Negative Materials for Automotive Industry – April 19, 2021

- Solvay, founded 1863, is a global leader in chemicals and materials with more than 23,000 employees in 64 countries, and net sales of €9 billion in 2020
- Collaboration to develop advanced materials for the automotive industry, including a drop-in ready specialty polyamide, a polymer for internal combustion engine technology as well as e-mobility systems like e-motors and power electronics that can provide resistance to heat, toughness, corrosion, and operate at high voltages
- The companies believe these materials will be critical to decarbonize supply chains in the automotive industry and achieve the zero-carbon car
- “The cooperation with Origin Materials is a new important element in our continuous commitment to sustainability which, together with our customers, is at the heart of our operations and growth strategy,” said Mike Finelli, President of Solvay Specialty Polymers. “Today carbon negative-materials can be added to the evolution of our sustainability roadmap, which already includes different actions from the integrated use of renewables to generate electricity in our plants to pursuing more sustainable products with bio-sourced monomers or recycled content.”



# Ford Partnership



## “Origin Materials Launches Net Zero Automotive Program With Ford Motor Company” – June 10, 2021

- Launched Net Zero Automotive Program, a sustainable automotive supply chain initiative focused on industrializing new materials to drive decarbonization in the automotive industry
- Partnership will pursue drop-in applications for carbon negative PET plastic (polyethylene terephthalate) produced from sustainable wood residues with Origin technology
- Ford and Origin will also work together to develop sustainable pigments and fillers for automotive applications throughout the interior and exterior of the vehicle, including bumpers, paint pigment, door panels, tire filler, underbonnet foam sheet, black plastic, head rests, seat cushions, and arm rests



# Kolon Industries Partnership

## “Origin Materials and Kolon Form Strategic Partnership to Industrialize Advanced Carbon-Negative Chemicals and Materials” – November 8, 2021

- Kolon Industries, a global leader in chemicals and materials, signed a multi-year capacity reservation agreement to purchase sustainable carbon-negative materials from Origin Materials
- Materials include novel polymers and drop-in solutions for select applications, with an initial focus on automotive applications
- The partnership includes development work aimed at commercializing polyethylene furanoate (“PEF”), a polymer with an attractive combination of performance characteristics for packaging and other applications, including enhanced barrier properties when compared with polyethylene terephthalate (“PET”), degradability, and other qualities.
- Origin Materials’ technology platform is expected to produce cost-competitive, sustainable carbon-negative furandicarboxylic acid (“FDCA”), the primary precursor to PEF. Kolon has deep expertise in novel FDCA-based polymers, including PEF.

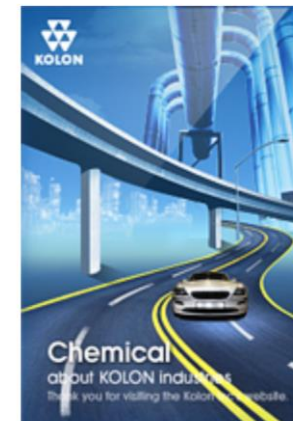
### Industrial Materials



### Film/EM



### Chemicals



### Fashion



Kolon Industries areas of business<sup>1</sup>

1. Included to indicate Kolon Industries areas of business, but does not imply collaboration or product development activity in every business area

# Mitsui Partnership



## “Origin Materials and Mitsui Form Strategic Partnership to Industrialize Advanced Carbon-Negative Chemicals and Materials”

– January 10, 2022

- Mitsui & Co., Ltd., a global leader in energy, machinery, chemicals, food, textile, logistics, finance, and more, signed a multi-year capacity reservation agreement to purchase sustainable carbon-negative materials from Origin Materials
- This strategic partnership aims to rapidly develop and industrialize new sustainable carbon-negative products for the automotive, chemicals, electronics, packaging, textiles, construction, and personal care industries based on Origin Materials’ patented technology platform
- The partnership will leverage Mitsui’s global supply chain strength, access to Japanese and international markets, and leadership in business innovation
- Mitsui is a global trading and investment company with a diversified business portfolio that spans approximately 63 countries in Asia, Europe, North, Central & South America, the Middle East, Africa and Oceania



Mitsui & Co., Ltd areas of business include mineral & metal resources, energy, machinery & infrastructure, chemicals, iron and steel products, lifestyle, and innovation & corporate development.<sup>1</sup>

1. Included to indicate Mitsui & Co., Ltd. areas of business, but does not imply collaboration or product development activity in every business area.



# Minafin Partnership



- Belgium headquartered Minafin Group is a leading developer and manufacturer of fine chemicals with three main areas of expertise: health chemistry, green chemistry, and challenging chemistry
- Origin + Green Chemistry Division of the Minafin Group collaboration aims to bring cost-competitive biobased products to the market, with applications in the pharmaceutical, agricultural, cosmetics and personal care, and automotive industries
- This partnership demonstrates Origin's expanded product offerings apart from CMF- and HTC-derived materials, for applications in specialty and fine chemicals
- Minafin affiliate Pennakem aims to develop new technologies with Origin to further expand the market for Pennakem's biobased products
- Minafin business unit EcoXtract® is in discussions with Origin to commercialize its revolutionary biobased extraction process using sustainable carbon-negative materials produced by Origin. The EcoXtract® process efficiently extracts useful plant oils for food, cosmetics, and other applications



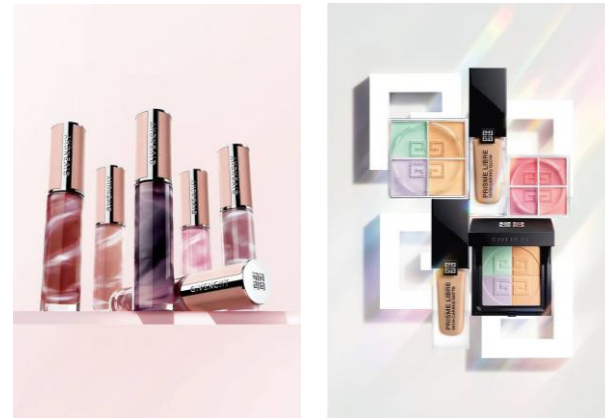
# LVMH Moët Hennessy Louis Vuitton Partnership (1 of 2)

LVMH

## “Origin Materials and LVMH Moët Hennessy Louis Vuitton Form Strategic Partnership to Bring Carbon Negative Materials to Perfumes and Cosmetics Industry”

– April 19, 2022

- Strategic partnership with LVMH Beauty, a division of LVMH, the global leader in luxury products
- LVMH has signed a multi-year capacity reservation agreement to purchase sustainable, carbon-negative polyethylene terephthalate (“PET”) for use in packaging for perfumes and cosmetics
- New category expansion and Origin’s first partnership with luxury brand
- Family of renowned LVMH Beauty brands includes Parfums Christian Dior, Parfums Givenchy, Guerlain, and others



LVMH Beauty brands shown: Parfums Christian Dior, Parfums Givenchy, Guerlain

# LVMH Moët Hennessy Louis Vuitton Partnership (2 of 2)

LVMH

“At LVMH, with our Life 360 program, we made the decision that our packaging will contain zero plastic from virgin fossil resources in a near future. Origin’s bioplastic technologies are playing a crucial role in helping LVMH achieve our sustainability targets without any compromise on quality. LVMH Beauty is happy to collaborate with Origin, supporting innovative technologies.”

– Claude Martinez, Executive President & Managing Director LVMH Beauty



LVMH Beauty brands shown: Parfums Christian Dior, Parfums Givenchy, Guerlain

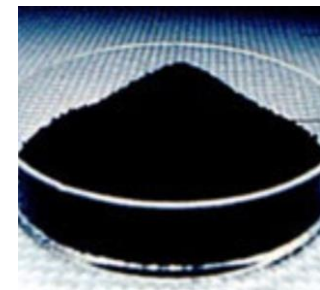
# Mitsubishi Chemical Group Partnership



## “Origin Materials and Mitsubishi Chemical Group Partner to Develop Advanced Carbon-Negative Materials for Tires”

– April 28, 2022

- Strategic partnership with Mitsubishi Chemical Group (“MCG”), Japan’s leading diversified chemicals and advanced materials producer
- MCG will convert HTC produced by Origin into high-performance analogs of specialty carbon black materials
- Represents Origin’s first announced carbon black partnership
- Carbon black applications include paint, printing inks, colored resin, toner, tires, and rubber products



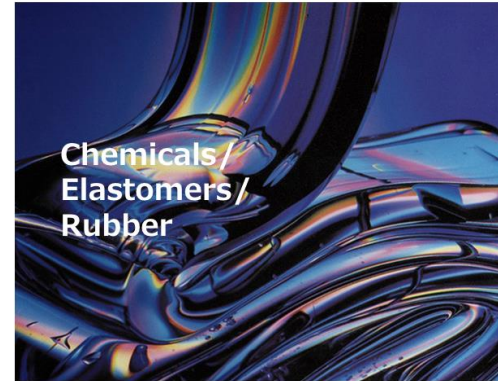
# Kuraray Partnership



## “Origin Materials and Kuraray Announce Carbon Negative Materials Partnership”

– June 16, 2022

- Kuraray, a global Japanese specialty chemicals company and one of the largest suppliers of industrial polymers and synthetic microfibers, signed a multi-year capacity reservation agreement to purchase sustainable carbon negative materials from Origin
- Strategic partnership to commercialize advanced carbon negative materials for diverse polymer applications
- The sustainable, carbon negative intermediate chemicals produced by Origin can be used in the large-scale synthesis of many polymers, including purified terephthalic acid (“PTA”), PET, and polyamide



Kuraray areas of business. Source: kuraray.com

# Revlon Initiative

REVLON®

## “Origin Materials and Revlon Announce Initiative to Develop Next-Generation Sustainable Packaging for Cosmetics”

– July 20, 2022

- Revlon, a leading global authority and beauty trendsetter in the world of color cosmetics and hair care, signed a memorandum of understanding to reserve commercial volumes of Origin PET
- Joint initiative to develop advanced carbon negative materials for next generation cosmetics packaging



Revlon is among the leading global beauty companies, with some of the world’s most iconic and desired brands and product offerings in color cosmetics, skin care, hair color, hair care and fragrances under brands such as Revlon, Revlon Professional, Elizabeth Arden, Almay, Mitchum, CND, American Crew, Creme of Nature, Cutex, Juicy Couture, Elizabeth Taylor, Britney Spears, Curve, John Varvatos, Christina Aguilera and AllSaints. Source: Revlon.com

# Intertex Partnership



## “Origin Materials and Intertex Announce Partnership to Produce 100% Bio-Content Carbon Black for Rubber Compounding”

– July 25, 2022

- Intertex World Resources, a leading value-added distributor of synthetic rubber, signed an offtake agreement to purchase sustainable carbon negative carbon black from Origin
- Origin carbon black, made from Origin’s hydrothermal carbon (“HTC”), is a versatile 100% bio-content filler and pigment
- Carbon black can be used in a wide range of applications including belts and hoses, mechanical rubber goods, tires, plastic masterbatch, and toners
- Partnership aims to produce carbon black for tires including N660, N550, and N762 specifications, as well as for belts, hoses, rubber seals, plastic extrusion, and other mechanical rubber goods markets



# ATC Plastics Partnership



## “Origin Materials and ATC Plastics Announce Partnership to Bring 100% Bio-Content Carbon Black to the Plastics Industry”

– July 27, 2022

- ATC Plastics, a leading global manufacturer of black color concentrates, agreed to purchase sustainable carbon-negative carbon black from Origin Materials
- The global market for carbon black is projected to reach \$26 billion by 2025, expanding at 6% CAGR. Plastics is anticipated to be the fastest-growing application for carbon black from 2019 to 2025 resulting from its use in the production of high-performance products
- Application targets include plastic masterbatch for corrugated pipe and plastic manufacturing processes such as blow molding, injection molding, pipe extrusion, compounding, plastic film and sheet, and rotational molding



Source: atcplastics.com



# Indorama Ventures Partnership



## “Origin Materials and Indorama Ventures Announce a Strategic Partnership to Accelerate the Mass Production of Bio-Based Materials”

– May 9, 2023

- Indorama Ventures and Origin signed a strategic MOU to explore initiatives related to the rapid commercialization of low-carbon bio-based materials
- Indorama Ventures is the world’s largest producer of virgin and recycled PET resins with about 26,000 employees worldwide and 2022 revenue of \$18.7 billion
- Companies to explore converting an Indorama Ventures’ U.S. facility into bio-based materials plant
- Companies to produce samples for use in limited-volume product launches with high-profile brands
- Materials could potentially be used in packaging, textiles, films, and automotive applications and could include bio-PET, bio-PTA, FDCA, and co-polyesters that have an advantage over traditional PET plastic



Clockwise from top left: Illustrative facility, PET fiber, automobile, PET bottle preforms.  
Source: [www.indoramaventures.com](http://www.indoramaventures.com)

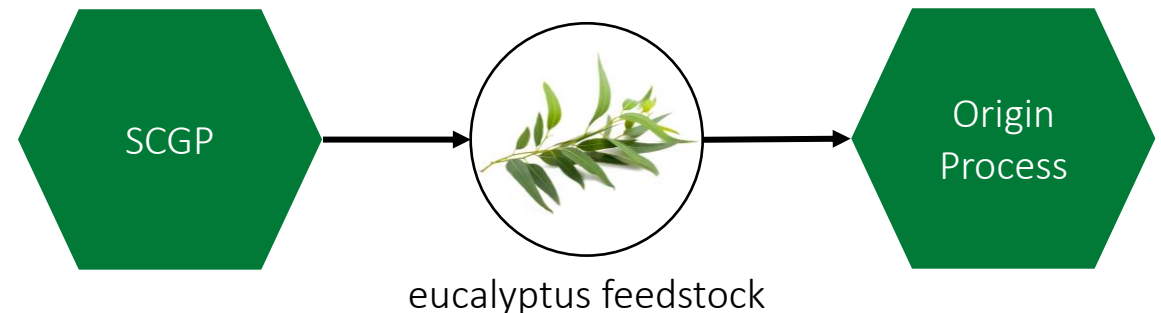
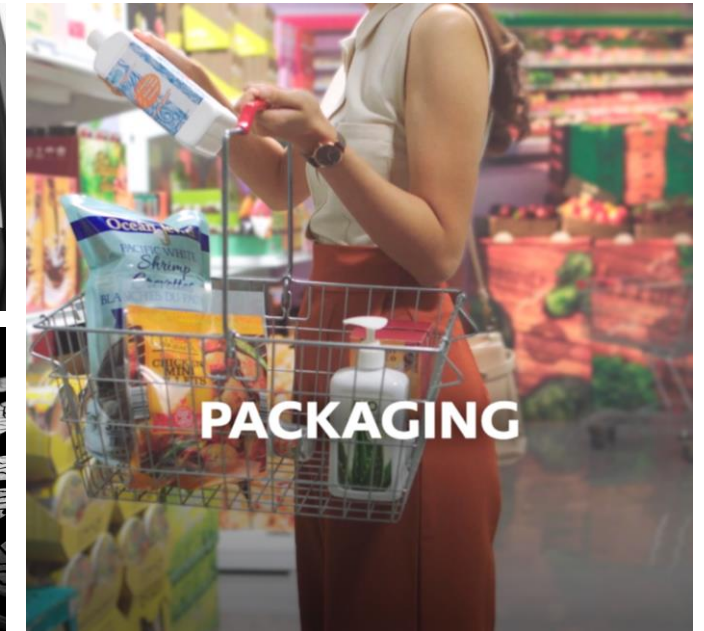
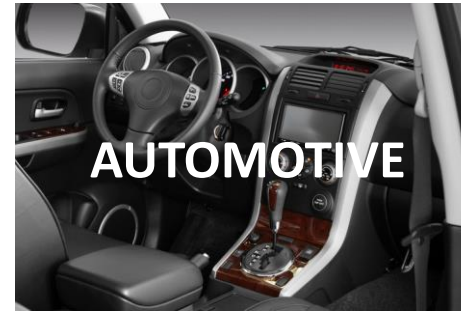
# SCGP Partnership



## “Origin Materials and SCGP Announce Strategic Partnership in Innovation and Sustainability to Explore Licensing Origin Technology for ASEAN-Based Plant”

– April 17, 2023

- SCG Packaging PLC (“SCGP”), a leading multinational consumer packaging solutions provider, signed a JDA with Origin Materials
- Opens pathways for further scaling Origin technology, including potentially through a global licensing strategy
- Targeting applications in food packaging, logistics, automotive, and construction
- Origin successfully processed and tested SCGP’s eucalyptus feedstock in its pilot facility, confirming similar yields to other sustainable wood residues that Origin has evaluated
- As a feedstock, eucalyptus offers several benefits including rapid growth, adaptability to diverse environments, and other properties useful for industry

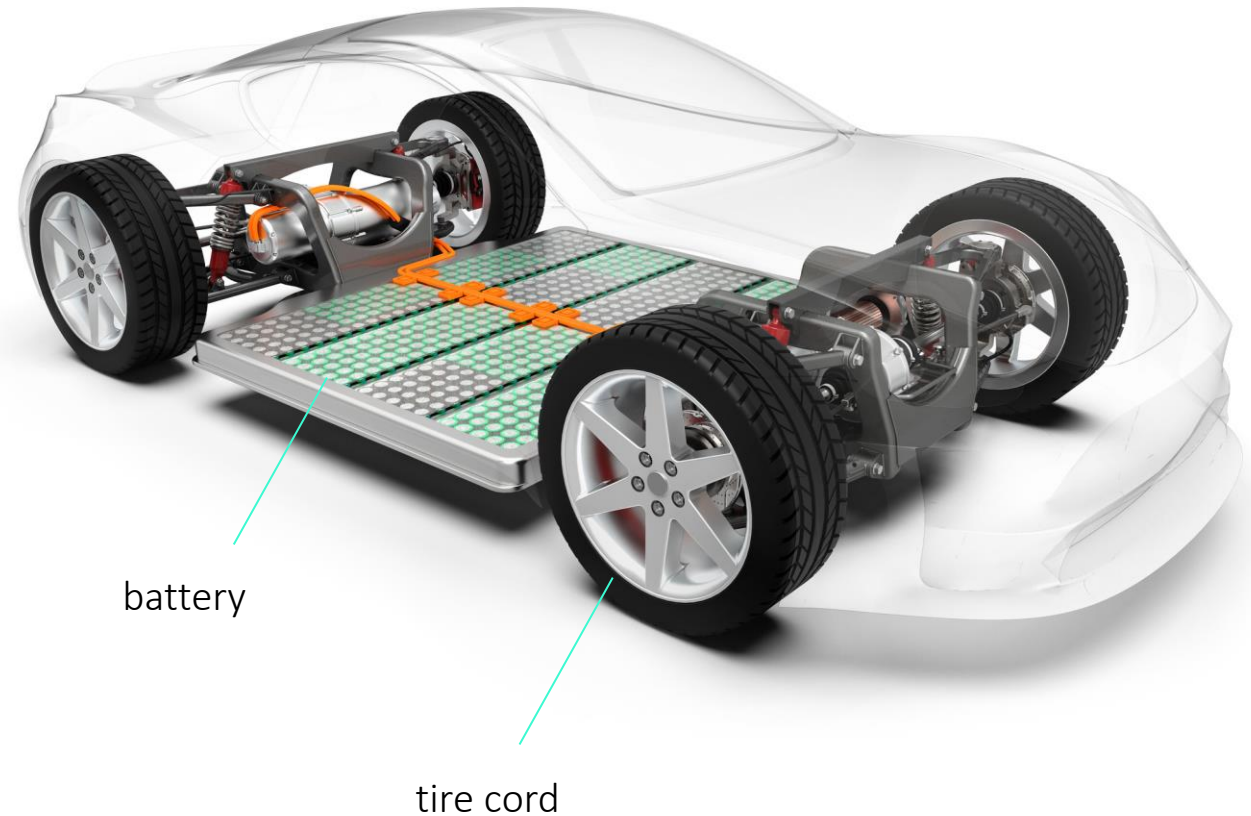


# Hyosung Partnership

## “Origin Materials and Hyosung Partner to Produce Batteries, Automotive Parts, and Apparel from Carbon-Negative Materials”

– March 22, 2023

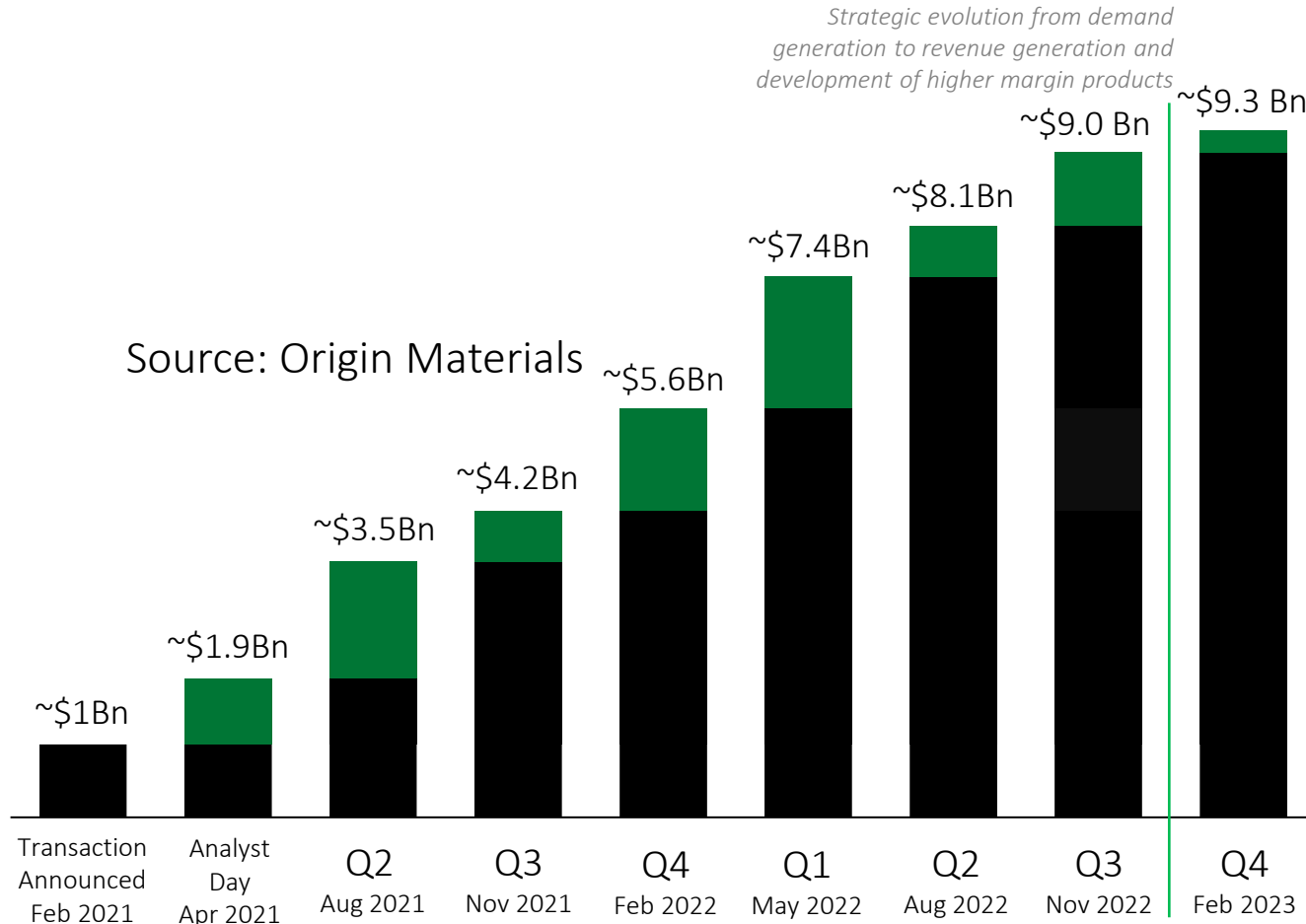
- Hyosung Advanced Materials, a Korea-based industrial materials company, signed a multi-year capacity reservation agreement to purchase sustainable carbon-negative materials from Origin
- The materials include PET and a hybrid polymer PET/F (a blend of PET and FDCA) for use in tire cord applications, HTC for use in battery materials, as well as furanic derivatives for use in spandex applications in the apparel industry



# Origin customer demand exceeds \$9.3Bn, a more than ninefold increase since announcement to go public in February 2021

Total demand consists of offtake agreements or capacity reservations<sup>1</sup>

Customer Demand, \$Bn cumulative<sup>2</sup>



## Select Origin Customers & Partners

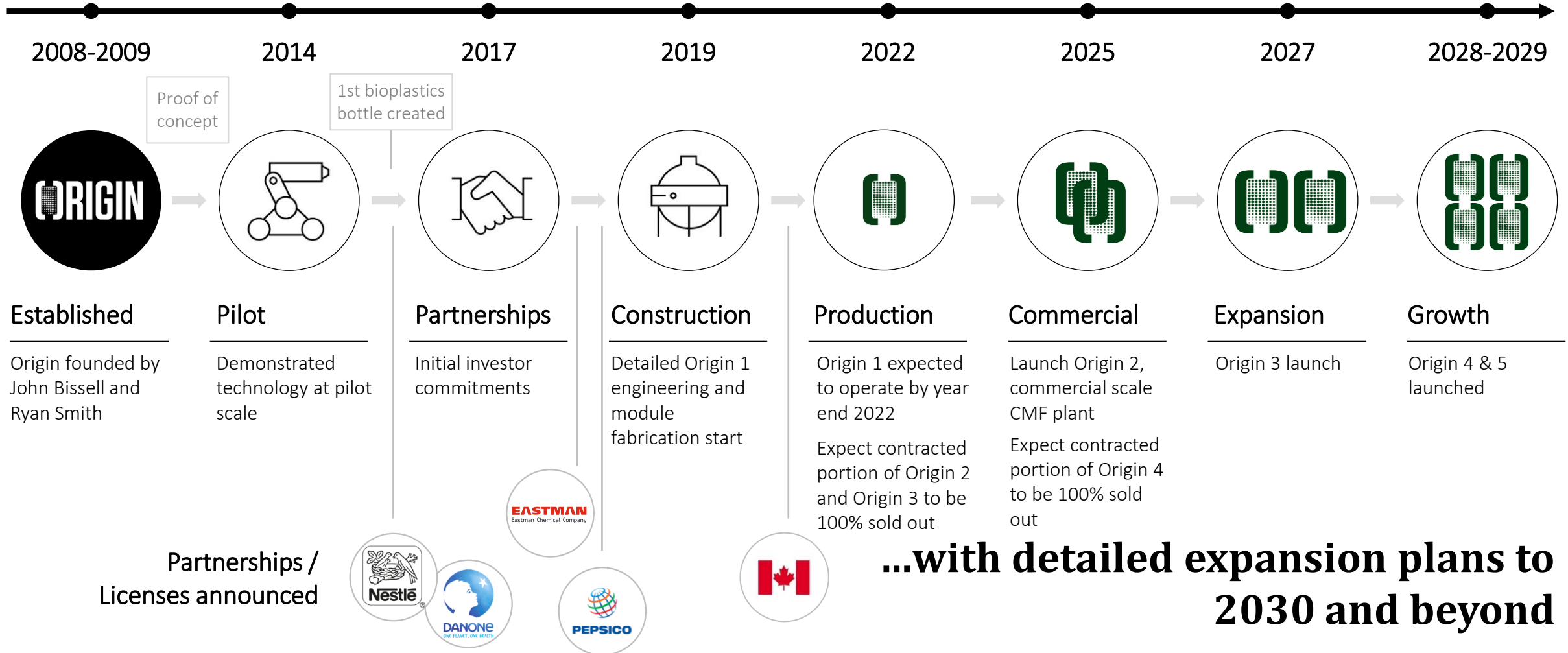


1. Figures assume maximum offtake amounts and exercise of full capacity reservations. As of February 2023, Origin Materials' commercial strategy evolved from demand generation to revenue generation and the development of higher margin products, and as such the Company does not plan to provide quarterly updates to its total signed offtake agreements and capacity agreements but will provide updates as appropriate.

2. In the chart, green color denotes the incremental increase in customer demand for a given quarter.

As previously reported in the Q1 2023 Earnings Presentation of Origin Materials, Inc. dated May 10, 2023. Source: Origin Materials.

# Origin is building on a strong foundation toward rapid growth...



**...with detailed expansion plans to 2030 and beyond**

# Origin 1 start-up expected in Q2 2023, in-line with prior guidance

Plant is mechanically complete with commissioning underway

- Commercial-scale plant expected to enable customers to qualify products and applications beyond PET and HTC fuel pellets; higher value products ultimately to be produced and sold at world scale from Origin 2, Origin 3, and beyond
- In addition to para-xylene and bio-PET, Origin is exploring or qualifying FDCA, epoxies and resins, surfactants, sustainable carbon black, bio-asphalt, fuel pellets, as well as biofuel and bio-solvents from an “oils and extractives” stream co-produced with CMF and HTC not included in previous plans
- Origin 1 will be operated to optimally fulfill customer demand around qualification and sampling



# Minafin Expanded Relationship – Origin 1 Initiative

## “Origin Materials and Minafin Group Launch Manufacturing Initiative for Origin’s First Commercial Plant”

– April 19, 2023

- Green Chemistry Division of Minafin Group, a global fine chemical company, to serve as high-value conversion and manufacturing partner for Origin 1, improving downstream supply chain for novel chemistry
- CMF (chloromethylfurfural) produced by Origin at Origin 1 will be delivered to Minafin, which will convert CMF into downstream intermediates and products
- Expands on the companies’ previously announced strategic partnership to industrialize sustainable chemicals
- Complementary technologies to grow value of bio-based supply chain including bio-based PET



Manufacturing initiative builds on the strengths of Origin’s patented technology platform, which turns the carbon found in sustainable wood residues into useful materials, and Minafin’s manufacturing capability, process know-how, supply chain strength, and deep expertise in furanic specialty products

# Origin 1 platform development

Origin's first plant will play a key application development role including exploring additional high-value products

## Strategic asset



## Intermediate streams

**"CMF"**  
5-Chloro-methyl-furfural

**"HTC"**  
Hydrothermal carbon

**"Oils & Extractives"<sup>1</sup>**

## Products being explored or qualified (JDAs, sample production)

Para-xylene  
and Bio-PET

FDCA

Epoxies and  
Resins

Surfactants

Sustainable  
Carbon Black

Bio-asphalt

Fuel Pellets

Biofuel

Bio-Solvents

1. See page 10 for detail.  
As previously reported in the Q4 2022 Earnings Presentation of Origin Materials, Inc. dated February 23, 2023.



# The superior performance of Origin's carbon black derives from HTC and the proprietary core chemical process by which Origin creates it (1 of 2)

HTC is derived from wood residues reacted in Origin's core process

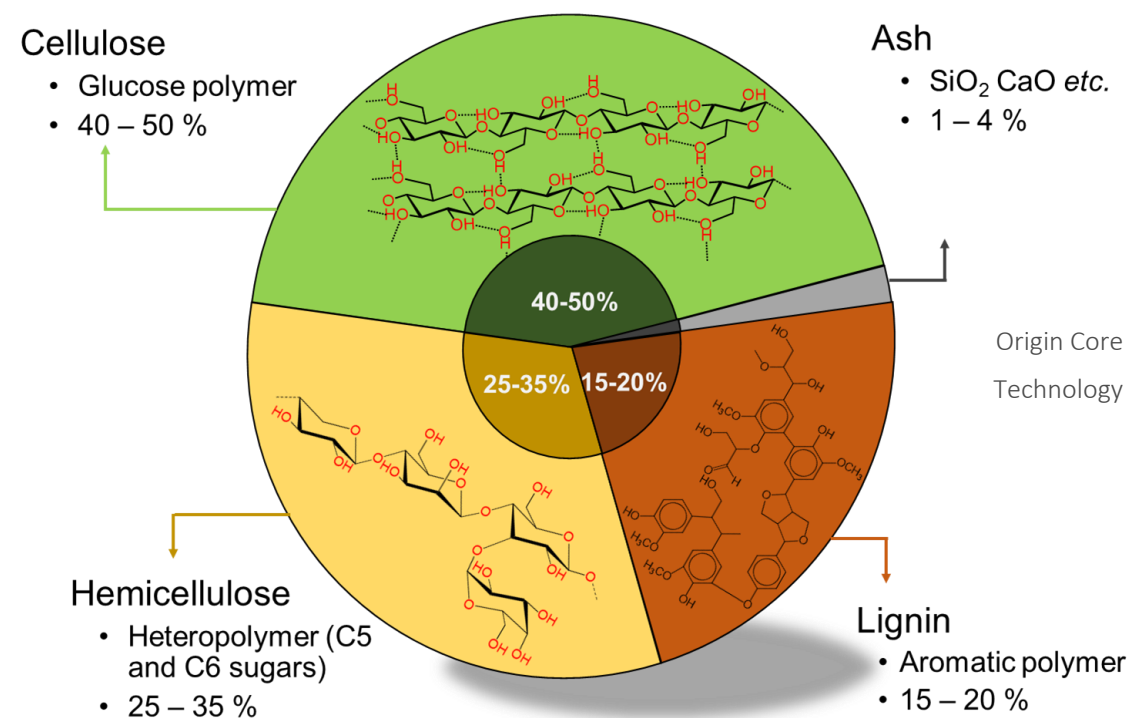
During conversion of biomass to HTC:

- Cellulose and components of hemicellulose convert to CMF
- Lignin and some degraded CMF form HTC

HTC is a unique material

- Resulting from the interaction of CMF and lignin in Origin's core process

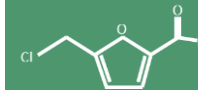
## Wood residue biopolymers<sup>1</sup>



## Intermediates

"CMF"

5-Chloro-methyl-furfural



"HTC"

Hydrothermal Carbon

C

"Oils & Extractives"

Origin Core Technology



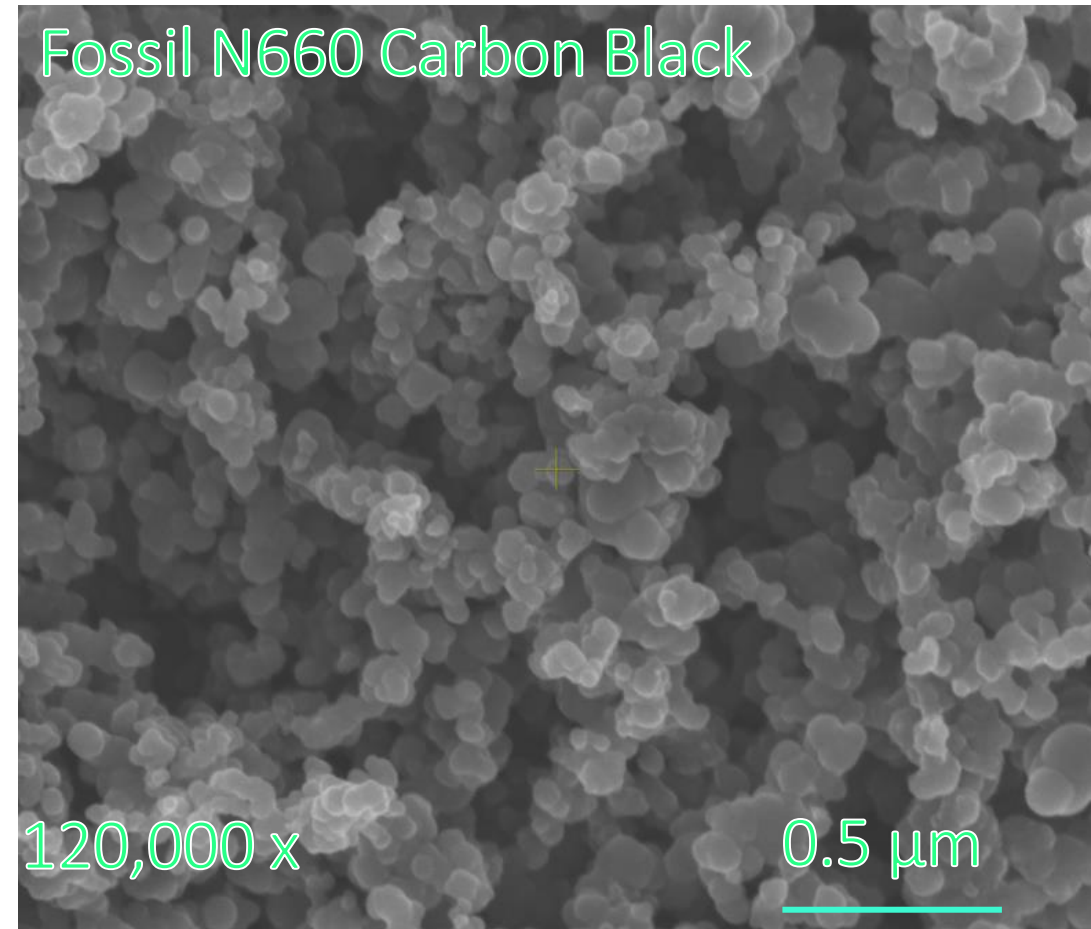
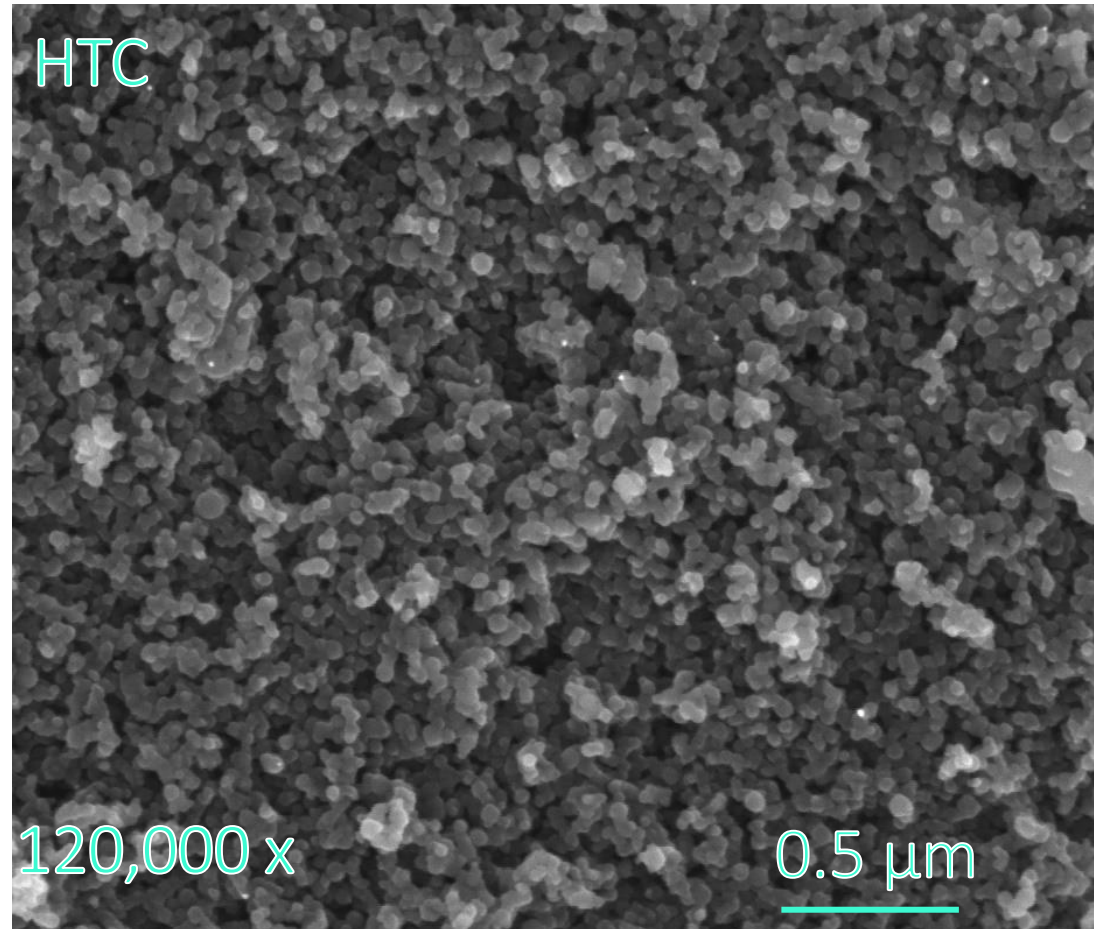
1. Percentages given on mass basis.

Source: Origin Materials

As previously reported in the Q1 2023 Earnings Presentation of Origin Materials, Inc. dated May 10, 2023.

# The superior performance of Origin's carbon black derives from HTC and the proprietary core chemical process by which Origin creates it (2 of 2)

Carbon black derived from Origin's HTC is physically similar to fossil-based carbon black



HTC primary particles (left) form as “grapelike” aggregates during the conversion of lignocellulosic biomass to platform intermediates including CMF. The structure of these aggregates is complex and similar to N660 carbon black derived from oil (right).

# Origin is making strong progress in carbon black development with demonstrated superiority in performance and sustainability (1 of 2)

## “Origin Materials’ Sustainable Carbon Black Blends Meet or Exceed Fossil-Based N660 Performance for Tires and Mechanical Rubber Goods”

– March 30, 2023

- N660 is a widely used and technically demanding “gold standard” performance specification for automotive tires and mechanical rubber goods
- Bench-scale results validate Origin’s carbon black as high-performance bio-based tire filler which can be blended into mechanical rubber goods and automotive applications
- Compared with fossil-based N660 carbon black, Origin carbon black blends showed equivalent or improved performance

### Origin’s Carbon Black Product Benefits

- Sustainable replacement for fossil-based carbon black
- Up to 100% bio-content with low carbon intensity
- Tunable characteristics include particle size, surface area and surface hydrophilicity/hydrophobicity
- No detectable polycyclic aromatic hydrocarbons, or PAHs
- Expected to provide stable pricing largely de-coupled from the petroleum supply chain, which is exposed to more volatility than supply chains based on sustainable wood residues
- Attractive alternative to reclaimed carbon black since it does not suffer the same performance limitations and can even exceed performance of fossil-based materials
- Production of Origin’s carbon black not expected to be affected by the same regulatory limitations in the United States as fossil-based carbon black
- Can achieve superior dispersion and tan delta, qualities which offer performance advantages in tires related to durability and fuel economy

# Origin is making strong progress in carbon black development with demonstrated superiority in performance and sustainability (2 of 2)

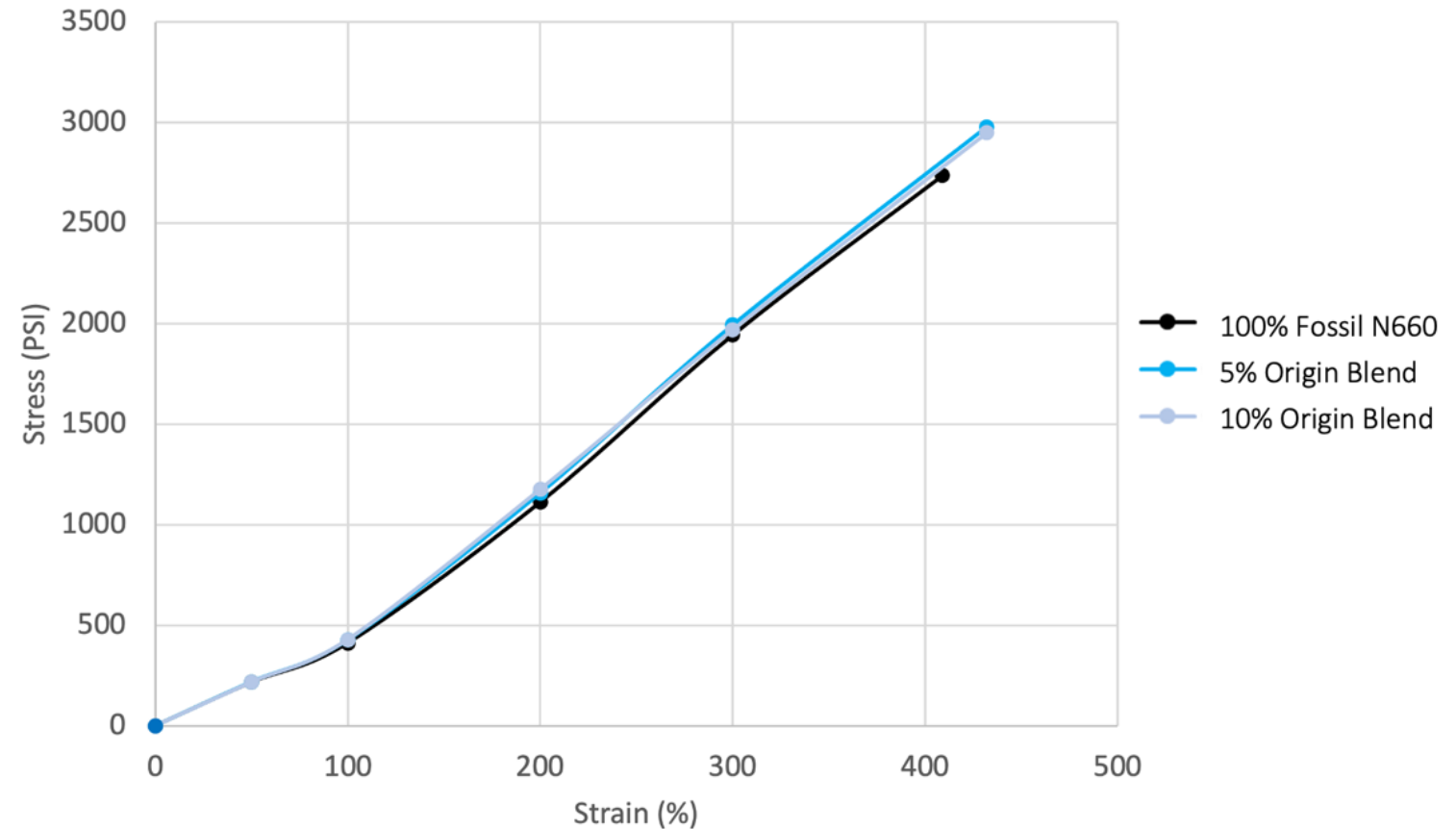
“Origin Materials’ Sustainable Carbon Black Blends Meet or Exceed Fossil-Based N660 Performance for Tires and Mechanical Rubber Goods”

– March 30, 2023

## Technical Overview

- Rubber compounds containing up to 10% Origin carbon black blend showed equivalent or improved performance compared with traditional fossil-based N660 ASTM carbon black under stress-strain analysis, as shown at right
- % Origin carbon black expected to increase in future studies
- Compared with fossil-based carbon black, blends containing Origin’s carbon black could achieve superior dispersion and tan delta, qualities which offer performance advantages in tires related to durability and fuel economy

Stress vs Strain Curve – Origin Carbon Black Study

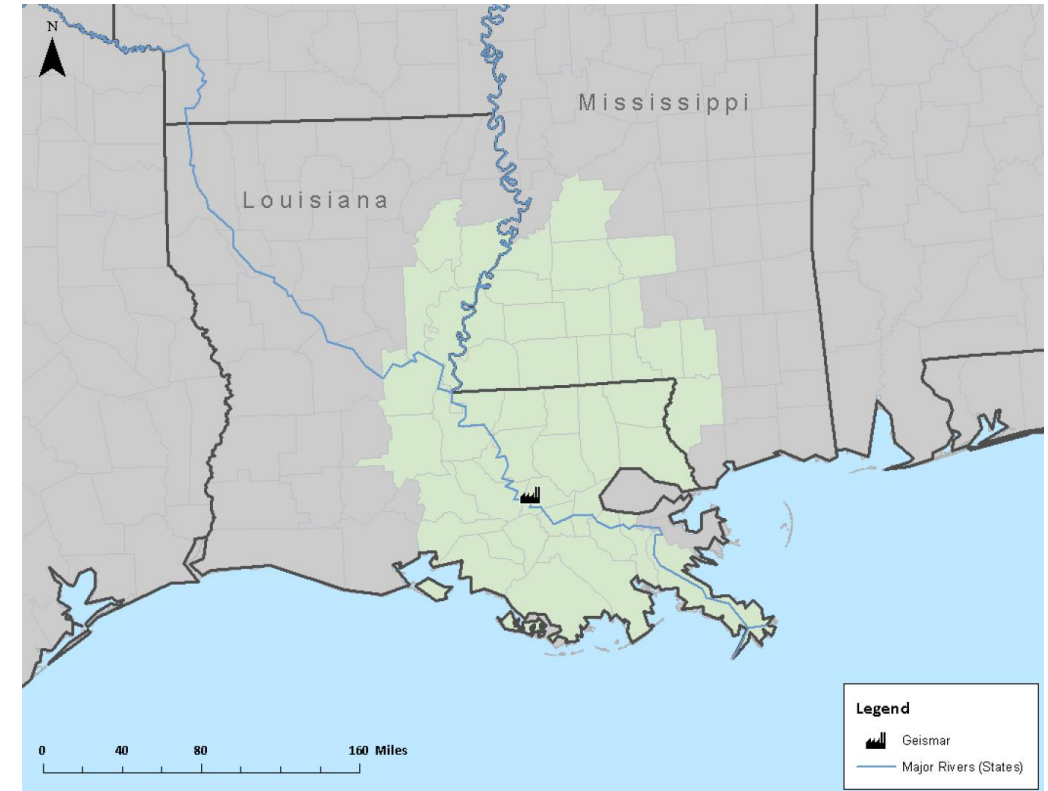


# Construction – Origin 2 (1 of 3)

“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

*(Continued on next page)*



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>

1. 2,000 pounds, inclusive of moisture content.

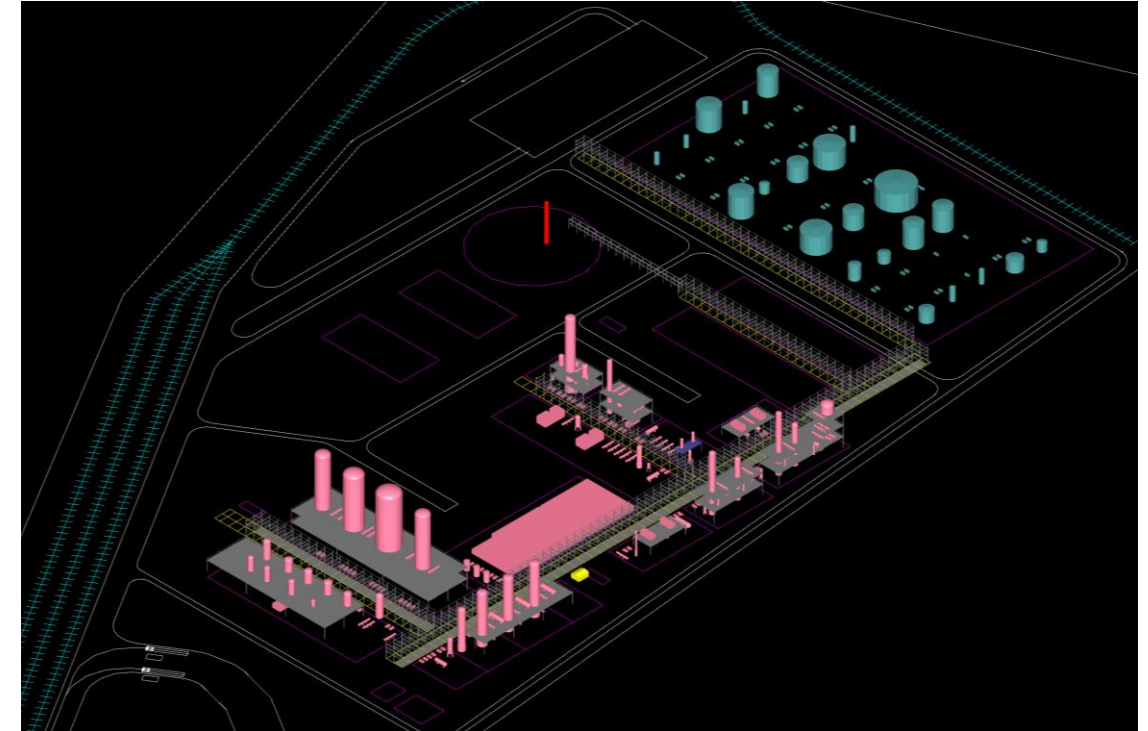
2. Fisher International.

As previously reported in the Q4 2021 Earnings Presentation of Origin Materials, Inc. dated February 24, 2022.

# Construction – Origin 2 (2 of 3)

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

- The local industrial cluster offers access to reliable utilities, including hydrogen pipelines, ethylene pipelines, valuable inorganic species, water, and wastewater treatment
- Opportunities to place Origin products in the local industrial ecosystem and to participate as a customer in that ecosystem as well
- The site offers exceptional logistics via rail and water, located along the Mississippi River with easy barge access to the Gulf Coast, which is valuable for the distribution of chemical intermediates
- The site is nearby other chemical company potential partners, with approximately 15 chemical companies and refineries in the nearby Geismar area
- Baton Rouge and New Orleans have extremely skilled labor pools across refining, pulp and paper, forestry and agronomy, feedstock logistics, and chemicals
- The 150-acre facility would create an estimated 500 construction jobs, 200 local full-time positions, and between 500 and 1,000 indirect local jobs



Preliminary rendering of Origin 2 at Geismar site

# Construction – Origin 2 (3 of 3)

Origin has selected Hunt, Guillot & Associates as its owner’s engineer for Origin 2

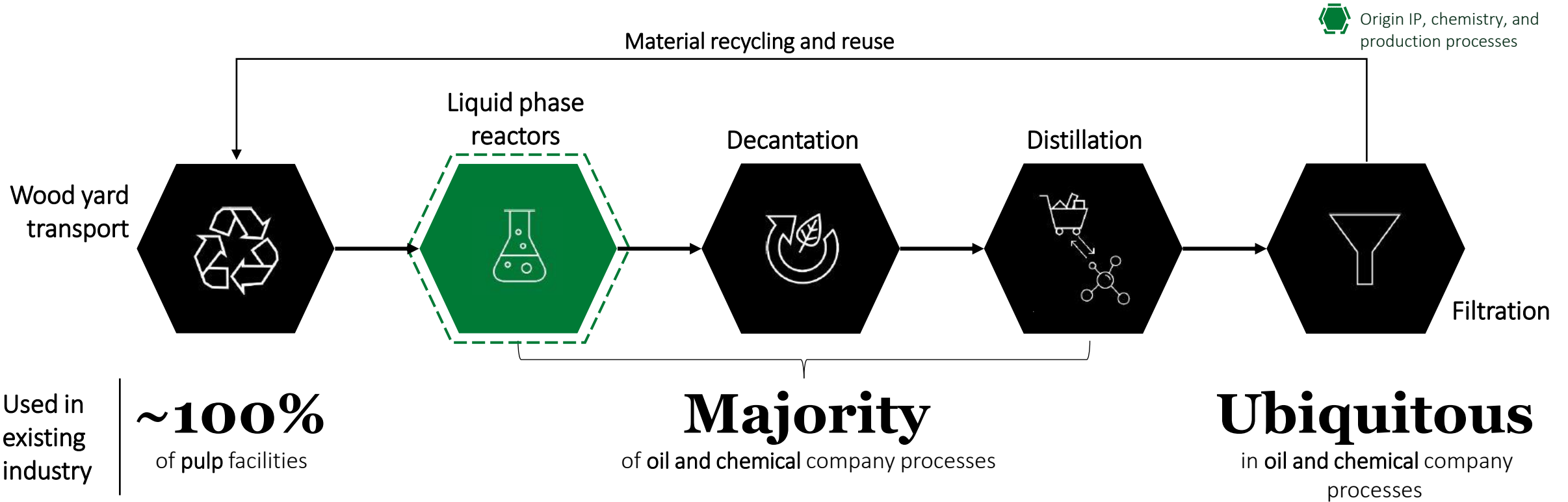


- The owner’s engineer will provide full-service engineering to support and augment Origin in all phases of the project, from early design to construction, logistics, planning, detailed scheduling, cost forecasts, progress tracking and reporting, and work stream integration
- As a multi-disciplined project management and engineering services company, HGA has provided professional services to an extensive portfolio of customers throughout numerous industries for 25 years. HGA has ten locations throughout Louisiana, Texas, Arkansas, and Alabama and has provided full-service offerings in over 30 states, Puerto Rico, Canada, China, and Mexico
- HGA is located close to many tier 1 engineering companies, the Origin 2 site in Geismar, Louisiana, and much of the Origin design team
- HGA owner’s engineer experts have conducted multiple billion-dollar projects
- HGA has extensive wood handling and forest products experience



HGA projects

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



**28** Patent families protect unique CMF and HTC production processes<sup>1</sup>

**Zero**

untested mechanical processes required for operations / scale-up<sup>2</sup>

1. As previously reported in the Q1 2023 Earnings Presentation of Origin Materials, Inc. dated May 10, 2023.

2. Origin does not rely on any novel mechanical processes in its plants. All of Origin's mechanical processes are standard mechanical processes utilized in the chemicals and refining industry. Source: Origin Materials.

As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021, except where otherwise noted.



# Origin's technology uses conventional chemical processing, which is inherently well suited to scale-up

Moreover, Origin technology offers additional technical and economic advantages for process scale-up

## Origin technology scale-up advantages

### Proven approach for scaling up bio-processes

Conventional chemical bio-processes that have scaled up include bio-diesel, Kraft process, PLA, ethanol to ethylene, and renewable diesel

### Conventional equipment

Standard equipment used in the chemical industry for centuries makes scale-up more straightforward than processes requiring new mechanical designs

### Extensively tested at pilot scale

Origin's process has been extensively run and stress tested at pilot scale for over 10 years

### Powerful demand pull

Carbon efficiency and the low cost & volatility of feedstock drive demand for Origin's products

## Technology comparison

	Origin conventional chemo-catalytic chemical process	Fermentation Process	Thermochemical Process (e.g. gasification / pyrolysis)
carbon efficiency (product yield <sup>1</sup> )	high ✓ (removes oxygen via H <sub>2</sub> O)	low (removes oxygen via CO <sub>2</sub> )	low (removes oxygen via CO <sub>2</sub> )
feedstock variation	robust ✓ (a vast number of compositions can be used)	moderate ✓ (causes stress and inhibition)	fragile (salt accumulation and process inhibition)
equipment	conventional ✓	conventional ✓	novel
temperature	moderate ✓	moderate ✓	high

1. Yield of carbon in product as a fraction of carbon input  
As previously reported in the Q2 2021 Earnings Presentation of Origin Materials, Inc. dated August 12, 2021.

# Origin has meaningful advantages over bioplastics companies

✓ Origin advantaged category vs. non-fossil competitors

	<b>ORIGIN</b>	Company A PHA	Company B PEF / FDCA	Company C PLA	Fossil
<b>TAM</b> \$ Bn	\$1,000	\$0.1 - \$0.5	\$250	\$1.5 - \$5.0	\$1,960
<b>Carbon footprint<sup>1</sup>, indexed to fossil</b>	<0	~0.7	0.3	0.3	1.0
<b>Illustrative feedstock cost, \$/lb</b>	\$0.03 Timber	\$0.36 Vegetable Oil	\$0.36 Fructose	\$0.15 Glucose	\$0.18 Oil
<b>Process reliability</b>	Chemical	Fermentation	Chemical	Fermentation	Chemical
<b>Market maturity</b>	Established	Nascent	Nascent	Nascent	Established
<b>Recyclability</b>	Strong existing infrastructure <sup>2</sup>	No existing infrastructure	Limited Infrastructure	Extremely limited infrastructure	Strong existing infrastructure
<b>Degradability</b>	Non-degradable PET; Industrial composting PEF <sup>3</sup>	Natural composting	Industrial composting <sup>3</sup>	Industrial composting	Non-degradable

**Origin...**

- Larger TAM
- Less expensive
- More sustainable
- Lower risk

1. For end product; carbon footprint based on publicly available feedstock footprint for analogous biofuels process (CORSA, REDII). 2. Refers only to PET. 3. Further study needed to determine if industrial composting reproduces results observed in degradation studies.

Source: Company websites, filings and press releases; Market and technical research reports; Origin Materials management team.

As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Origin brings an unrivaled set of industry veterans, leaders, and visionaries



**Nate Whaley**  
CFO

- 20 years C-Suite experience scaling complex high growth business across industries



**Stephen Galowitz**  
CCO

- Co-founder / Chief Development Officer of renewables company
- 15 years experience in renewables space



**John Bissell**  
Co-Founder & Co-CEO

- Founded Origin Materials in 2008
- Featured on Forbes 30 under 30



**Rich Riley**  
Co-CEO

- Former CEO Shazam and senior executive at Yahoo!
- 20+ years managing rapid-growth organizations



**Ryan Smith**  
Co-Founder & CTO

- Founded Origin Materials in 2008
- Process Engineer at NEC Electronics



**Josh Lee**  
General Counsel

- Attorney at Irell & Manella, LLP
- Sr. Analyst at Strumwasser & Woocher, LLP



**Roman Wolff**  
VP of Engineering

- Engineering leader at TETRA Technologies
- 30 years of experience in engineering on more than 20 projects



**Mako Masuno, PhD**  
Chief Scientist

- Pathway Development & Optimization Expert
- Organic Chemistry Professor



**Tanja Gruber, PhD**  
VP of R&D

- R&D leader at Dupont and IFF
- 20 years experience in academia and biochemical industry



**Chris Williams-Campbell**  
VP of HR

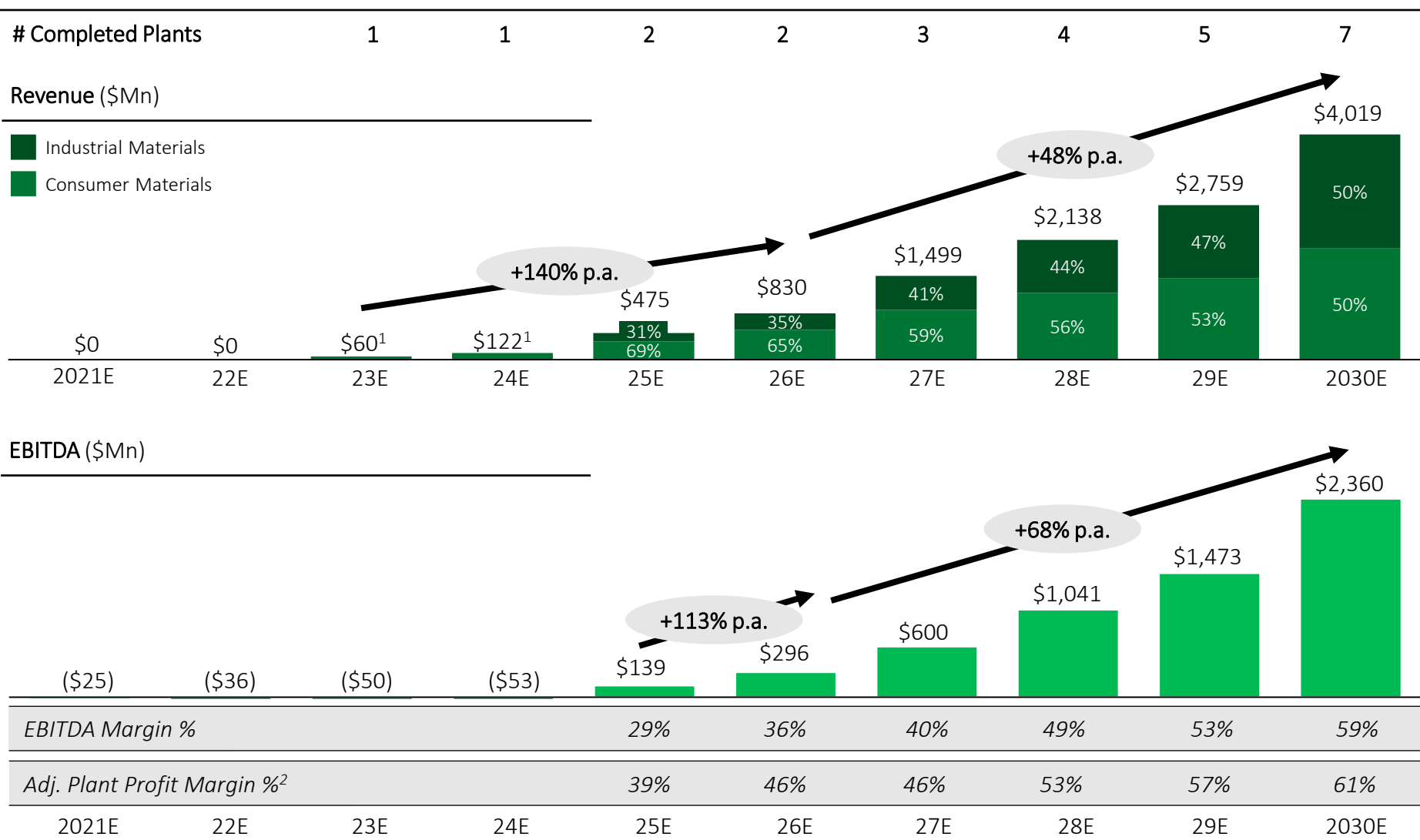
- 15 years experience in biotech, pharmaceutical, and medical device industries





**Appendix A: Previously  
Disclosed Financial  
Details (Analyst Day  
4/19/21,  
8-K, 10-Q, 10-K Filings)**

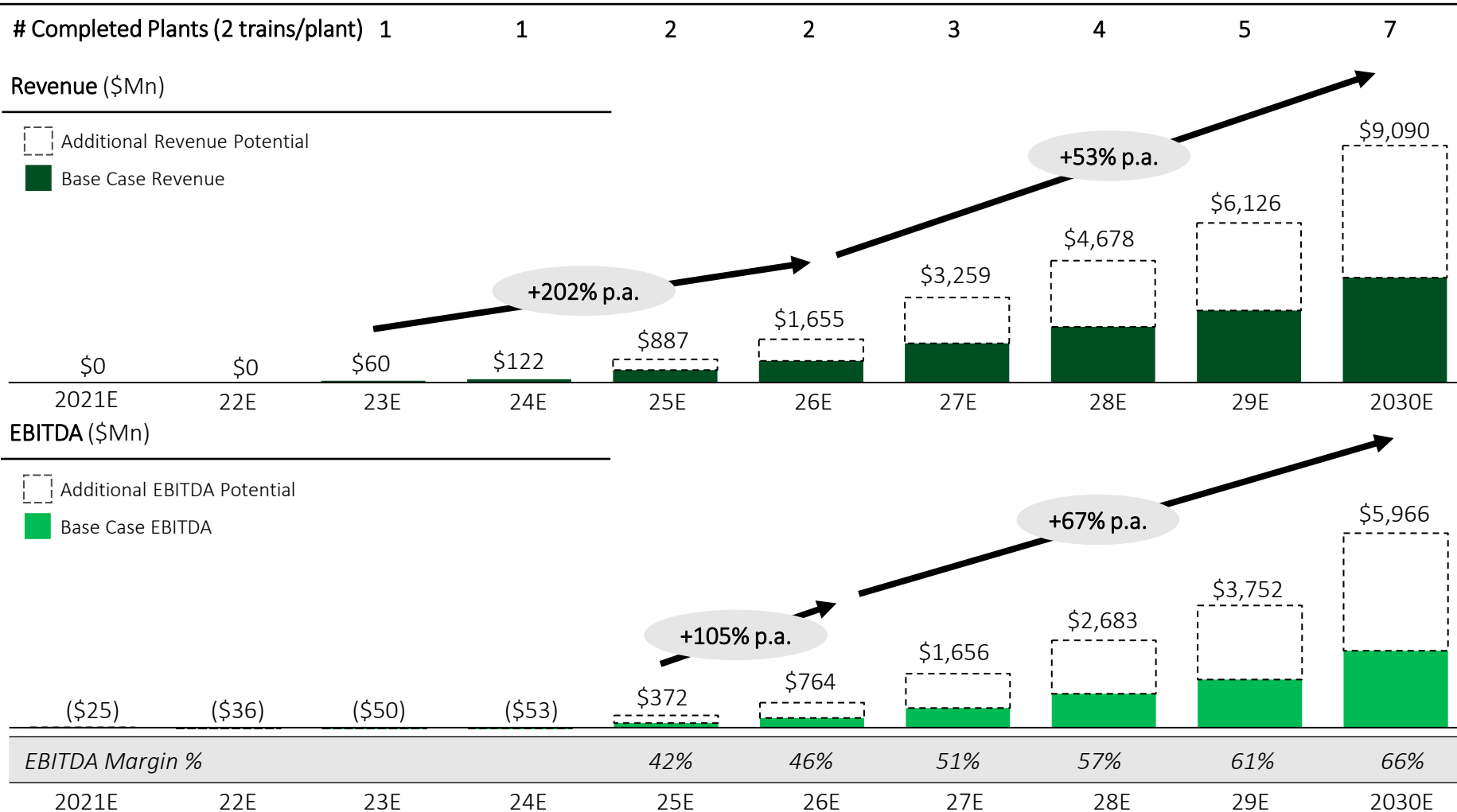
# Origin expects to deliver a superior financial profile for years to come



- Revenue and materials volume forecast / growth based on satisfying existing customer off-take contracts and expected future demand
- Pricing assumptions are based on negotiated contract pricing with existing customers
- Feedstock cost assumptions reflect historically low volatility of pine pulpwood prices
- Cost assumptions also include additional required overhead during scaling
- EBITDA margins and associated growth are expected to improve throughout the forecast period as a result of increasing economies of scale from additional plants coming online
- Includes R&D expenditures to maintain Origin as the global leader in low or negative carbon material technologies

Source: Origin Materials management estimates. 1. 100% of revenue allocated to consumer materials. 2. A non-GAAP measure defined as Revenue less all plant direct cash costs (excluding depreciation, amortization, interest and taxes) divided by revenue. As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Origin could see significant additional revenue potential



- Assumes Origin is able to secure moderately higher prices in new customer contracts as a result of strong demand and carbon negative materials scarcity
- Concurrently, assumes Origin adds capacity at a faster rate than base business plan<sup>1</sup>, adding two trains per new plant, effectively doubling capacity of each
- Feedstock prices assumed unchanged as primary feedstock supply (forest / wood processing residues) is ample and well above Origin's needs

1. Subject to capital availability.  
 Source: Origin Materials management estimates.  
 As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Long-term target operating model

	Origin Plant 1		Origin Plant 2		Origin Plant 3-7 Average	
<b>Illustrative Run-Rate Economics</b>						
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
<b>Revenue</b>	<b>\$122</b>	<b>\$0.84</b>	<b>\$708</b>	<b>\$0.29</b>	<b>\$637</b>	<b>\$0.49</b>
Consumer materials	\$122		\$414		\$291	
Industrial materials			\$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)
<b>Adj. Contribution<sup>2</sup></b>	<b>\$2</b>	<b>\$0.01</b>	<b>\$405</b>	<b>\$0.17</b>	<b>\$435</b>	<b>\$0.33</b>
Plant labor + other fixed costs	(\$6)	(\$0.04)	(\$20)	(\$0.01)	(\$20)	(\$0.02)
<b>Adj. Plant Profit</b>	<b>(\$4)</b>	<b>(\$0.03)</b>	<b>\$385</b>	<b>\$0.16</b>	<b>\$415</b>	<b>\$0.32</b>
<b>Primary Products</b>	PET/F, CMF, higher value application development samples		PET, HTC fuel		PET, PET/F, PEF <sup>3</sup> , CMF, FDCA <sup>4</sup> , carbon black, activated carbon, HTC fuel	

1. Denotes incremental capex to be spent in 2021-2022.

2. Reflected as adjusted gross profit in the base case projections included in the registration statement on Form S-4 as filed with the SEC by Artius Acquisition Inc. ("Artius") on March 9, 2021, as amended.

3. Polyethylene furanoate. 4. Furandicarboxylic acid. Source: Origin Materials management estimates.

As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Anticipated fully funding of Origin 1 and Origin 2 from cash on hand and traditional project financing sources

## Cash Flow Sources & Uses from 2021E to Origin 2 Revenue in 2025E (\$Mn)

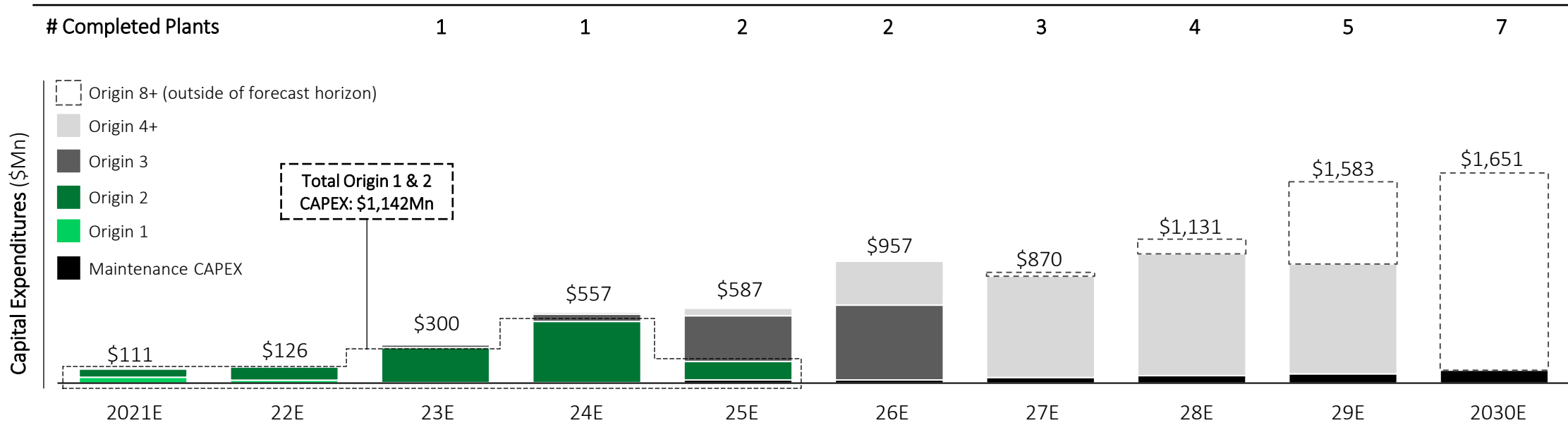
June 2021 Forecast

Gross Proceeds	\$529
Plus: Existing cash balance	3
Less: Transaction fees and expenses (net of prepaid out of existing cash balance) <sup>1</sup>	(61)
<b>Net Cash Balance<sup>2</sup></b>	<b>\$471</b>
Add: Project Financing <sup>4</sup>	\$804
Add: Local, State, and Federal Government Incentives / Support <sup>4</sup>	185
Less: Origin 1 Growth CAPEX <sup>5</sup>	(70)
Less: Origin 2 Growth CAPEX <sup>5</sup>	(1,072)
Less: Cash Flow from Operations '21 – '25 <sup>3</sup>	(218)
<b>Remaining Cash to Fund Origin 3 and Beyond<sup>6</sup></b>	<b>\$100</b>

1. Transaction expenses figure excludes \$3Mn prepaid out of existing cash balance; total transaction expenses including prepaid is \$65Mn. 2. Assumes none of the Artius warrants to acquire 35.5Mn shares are exercised. 3. Cash flow from operations calculated as EBITDA + Working Capital + Maintenance CAPEX from 2021 until reaching Origin 2 revenue in 2025. 4. Project financing and government incentives / support have not yet been secured. 5. Origin has confirmed its estimates for construction cost after considering the latest input from various suppliers, construction companies and consultants specializing in chemical plant constructions. Origin has built into its capital budget for Origin 1 and Origin 2 contingencies as a reserve for any unexpected construction "overrun" that are appropriate at this stage of planning. 6. Defined as net proceeds less annual cash flow from operations less equity financed growth CAPEX for Origin 1 and 2. Source: Origin Materials management estimates. As previously reported on Origin's Form 8-K filed on August 12, 2021.



# Anticipated fully funded growth plan to profitability



- Current transaction and anticipated financing and grants are expected to be sufficient to fully finance the construction of Origin 1 and Origin 2 and achieve EBITDA profitability
- CapEx based on estimates from world-leading EPC companies that Origin will partner with to deliver holistic capital project solutions
- Capacity scaling based on current customer contract commitments / orders and anticipation of demand from global industrial complex rushing to secure “drop in” decarbonized materials to meet their carbon commitments

# Share count as of 3/31/2023

<u>Class</u>	<u>Outstanding Shares of Common Stock</u>
<b>Total Shares Outstanding<sup>1</sup></b>	<b>138,767,991</b>
Shares subject to forfeiture <sup>1</sup>	4,500,000
<b>Total Shares Outstanding, including Shares subject to forfeiture<sup>1</sup></b>	<b>143,267,991</b>
	<u>Shares Reserved for Future Issuance Pursuant to Potential Earnouts, Outstanding Warrants, and Options</u>
Public Warrants <sup>2</sup>	24,149,960
Private Warrants <sup>2</sup>	11,326,667
Legacy Origin Earnout Shares <sup>3</sup>	25,000,000
Options and RSUs <sup>4, 5</sup>	17,098,060
<b>Total Shares<sup>5</sup></b>	<b>220,842,678</b>

1. 4.5 million shares held by a certain stockholder subject to forfeiture in three equal installments unless our Common Stock reaches certain trading price thresholds within certain specified time periods (10 consecutive trading day closing volume weighted average price targets of \$15, \$20, and \$25 within 3, 4 and 5 years after the closing of the business combination between Artius and legacy Origin (the "Business Combination"), respectively) 2. Warrant exercise price = \$11.50 per share. 3. 25,000,000 Earnout Shares are subject to issuance in three equal installments if our Common Stock reaches certain trading price thresholds within certain specified time periods (10 consecutive trading day closing volume weighted average price targets of \$15, \$20, and \$25 within 3, 4 and 5 years after the closing of the Business Combination, respectively). 4. Includes 4,826,441 options with a weighted average strike price of \$0.17/share and 1,481,531 performance-based options at \$0.14/share (423,294, 634,942, and 423,295 performance-based options vest if our Common Stock reaches volume weighted average price thresholds of \$15, \$25, and \$50 per share respectively for 10 consecutive trading days), 4,195,687 Restricted Stock Units, and 2,183,300 Performance Stock Units under which the maximum award can be up to 6,594,401 shares. 5. Excludes shares available for future issuance pursuant to our equity incentive plan and employee stock purchase plan.

# Reconciliation of GAAP and Non-GAAP results

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

We define Adjusted EBITDA as net income or loss adjusted for (i) stock-based compensation expense, (ii) depreciation and amortization, (iii) interest income, (iv) change in fair value of derivative, (v) change in fair value of warrants liability, (vi) change in fair value of earnout liability, (vii) other income, net.

(in thousands)	Three months ended March 31,	
	2023	2022
Net income	\$ 9,769	\$ 7,346
Stock based compensation	2,246	918
Depreciation and amortization	288	148
Interest income	(3,014)	(1,833)
Change in fair value of derivative	(760)	834
Change in fair value of warrants liability	(6,766)	1,774
Change in fair value of earnout liability	(12,872)	(15,227)
Other income, net	1,368	(450)
Adjusted EBITDA	\$ (9,741)	\$ (6,490)

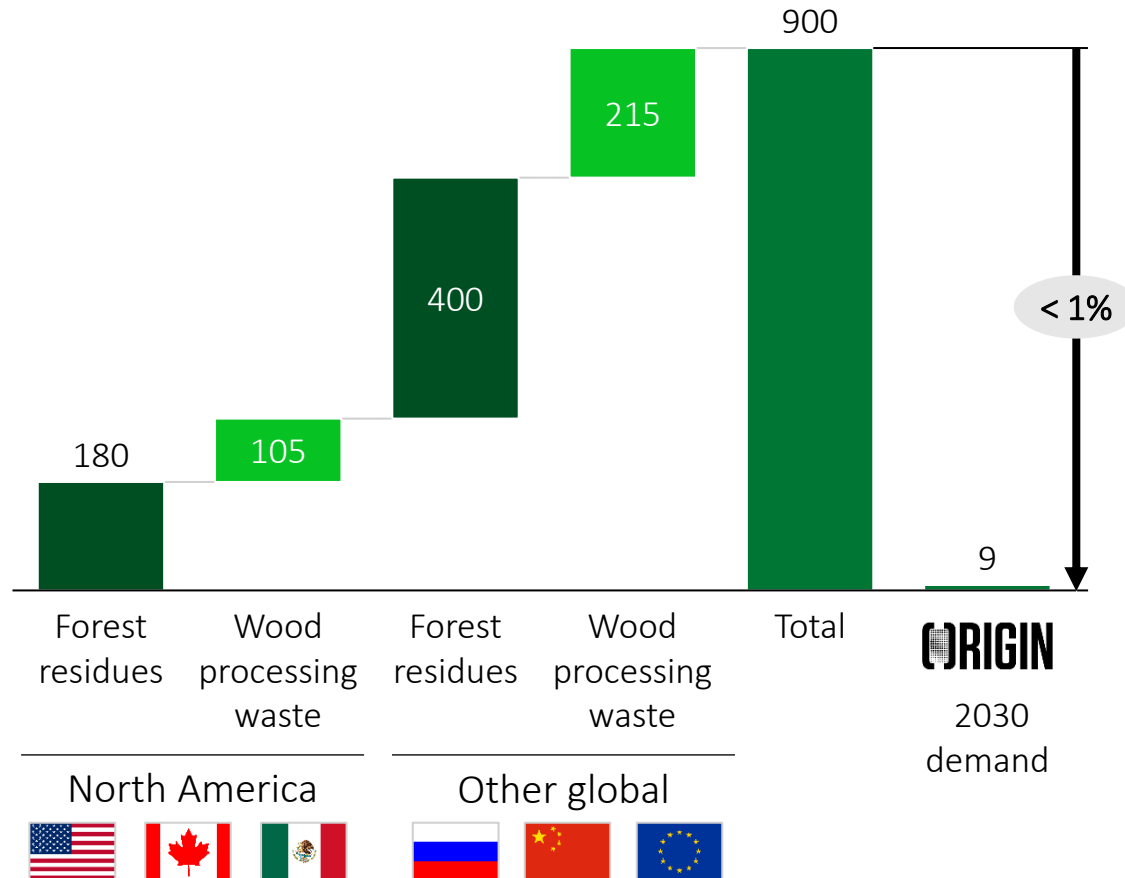


**Appendix B: Other  
Previously Disclosed  
Materials**

# Origin is not feedstock limited

## Primary feedstock (forest / wood processing residues)

Million tons annual availability



## Additional feedstock optionality



**> 2X**

Additional feedstock supply available above forest / wood processing residues alone

# Origin will look to value chain participants to complement its strengths

 Origin's strengths



“Our proprietary bread and butter”

- Proprietary technology in a league of its own

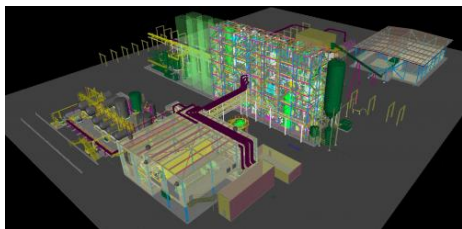
“Putting it all together”

- We will leverage an already-existing industrial base of monomer, polymer, additive, and packaging / extrusion technology
  - Beyond Origin 2 (monomers), we will license or sell that technology to a value chain participant

“Clear market pull”

- Years of experience working with the end consumer to address sustainability goals

Picture: Origin 1



Illustrative potential value chain participants<sup>1</sup>:



Origin is in discussions with multiple partners and is ready to scale its strategy through its next phase of growth

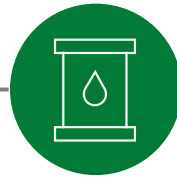
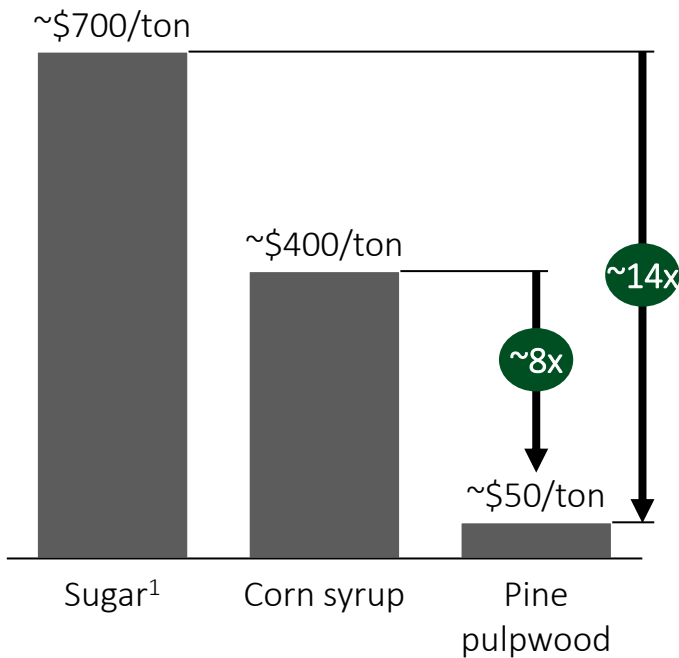
1. Origin Materials may or may not be in discussions with these parties.  
 Source: Origin Materials.  
 As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Origin's use of timber and forest residues as feedstock is a potential game changer



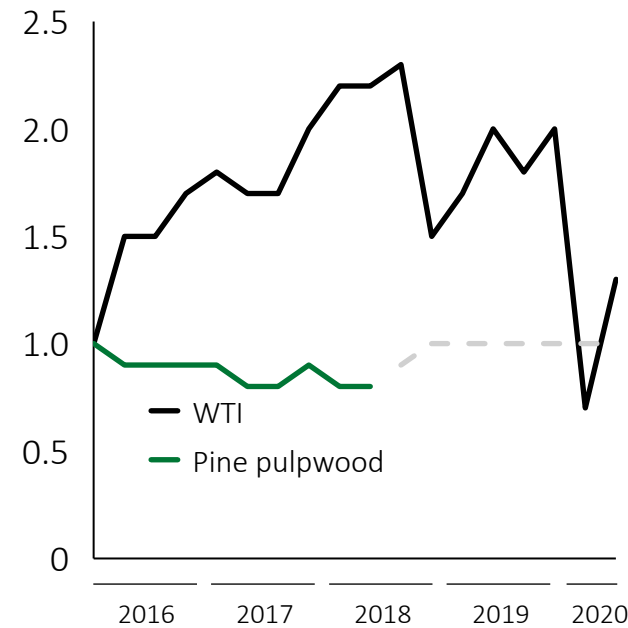
8x-14x cheaper than competing renewable feedstocks

## Feedstock price



Decoupled from supply volatility of the oil markets

## Indexed price (1 = Q1 2016 value)



Leverages waste, cleans forests, and lets food be food



Utilize waste



Improve forest management



Let food be food

1. Representative chemically relevant sugars such as glucose and high fructose corn syrup.  
Source: North Carolina State University; Economic Research Service, USDA; Macrotrends; and Origin Materials estimates.  
As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

# Origin is pursuing a capital efficient strategy to optimize CAPEX

Origin is keenly aware that **capital efficiency** will be the major driver of its **long term profitability**.

For this reason, Origin is pursuing a pulp mill **“brownfield” CAPEX strategy** to **save ~\$100Mn** on its total commercial plant CAPEX



Wood chip waste streams



Pulp mill scale

## Origin’s strategy:

**#1**

Identify & purchase mill

Work with partners to identify suitable aging / defunct pulp mill

**>40**

*Potential brownfield sites (e.g., closed pulp mills) in the US & Canada built in the last 50 years*

**#2**

Convert equipment

Leverage key components needed for its wood handling process (e.g., utilities, boiler, wood yard)

**>\$100Mn**

*Total useable value of converted equipment, even after considering expected upgrade costs*

**#3**

Integrate & operate

Integrate refurbished components into the rest of its necessary equipment / plant infrastructure

**Up to 15%**

*Net savings on total plant CAPEX, or ~\$100Mn co-location benefit*

Pulp mill “brownfield” strategy offers additional benefits, including the existing forest supply chain ecosystem and local gov’t incentives



# Glossary

## Abbreviation

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## Explanation

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Carbon negative

Carbon negative activities or products go beyond achieving reduced carbon impact, or net zero carbon impact, to actually remove additional carbon dioxide from the atmosphere

CMF

5-Chloromethylfurfural, organic compound obtained from dehydration derivatives

FDCA

2,5-Furandicarboxylic Acid, organic compound that is a renewable resource because it can be produced from carbohydrates

HTC

Hydrothermal Carbon, structured compounds that have been converted from organic compounds

PET

Polyethylene Terephthalate, most common thermoplastic polyester used for packaging foods and beverages

PEF

Polyethylene Furanoate, bio-based thermoplastic polyester also primarily used for packaging

pX

Paraxylene, an important chemical feedstock used in the large scale synthesis of various polymers



# ORIGIN

*The world's leading carbon negative materials company*