



## Company Overview

The world's leading carbon negative materials company

*November 2021*

# Forward looking statements and disclaimers

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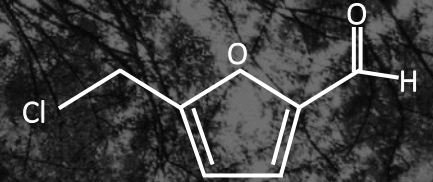
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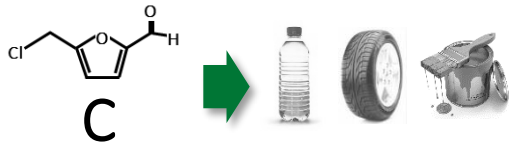
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# Origin Materials – At a Glance

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>

\$4.2Bn<sup>3</sup> and growing

from a diverse mix of industries

## Protected & Validated Technology

19 Patent Families

Core technology protected in key countries

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

\$460<sup>3</sup> Mn

Origin expected to be fully financed until EBITDA positive with anticipated financing and grants

1. Denotes ownership by PepsiCo, Danone and Nestlé prior to business combination with Artius Acquisition, Inc.

2. Includes \$264Mn specified as customer options. Figures assume maximum offtake amounts and exercise of full customer options. Refer to slide 21 for additional detail.

3. As previously reported in the Q3 2021 Earnings Presentation of Origin Materials, Inc. dated November 11, 2021.

4. As of September 30, 2021. Refer to slide 40 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



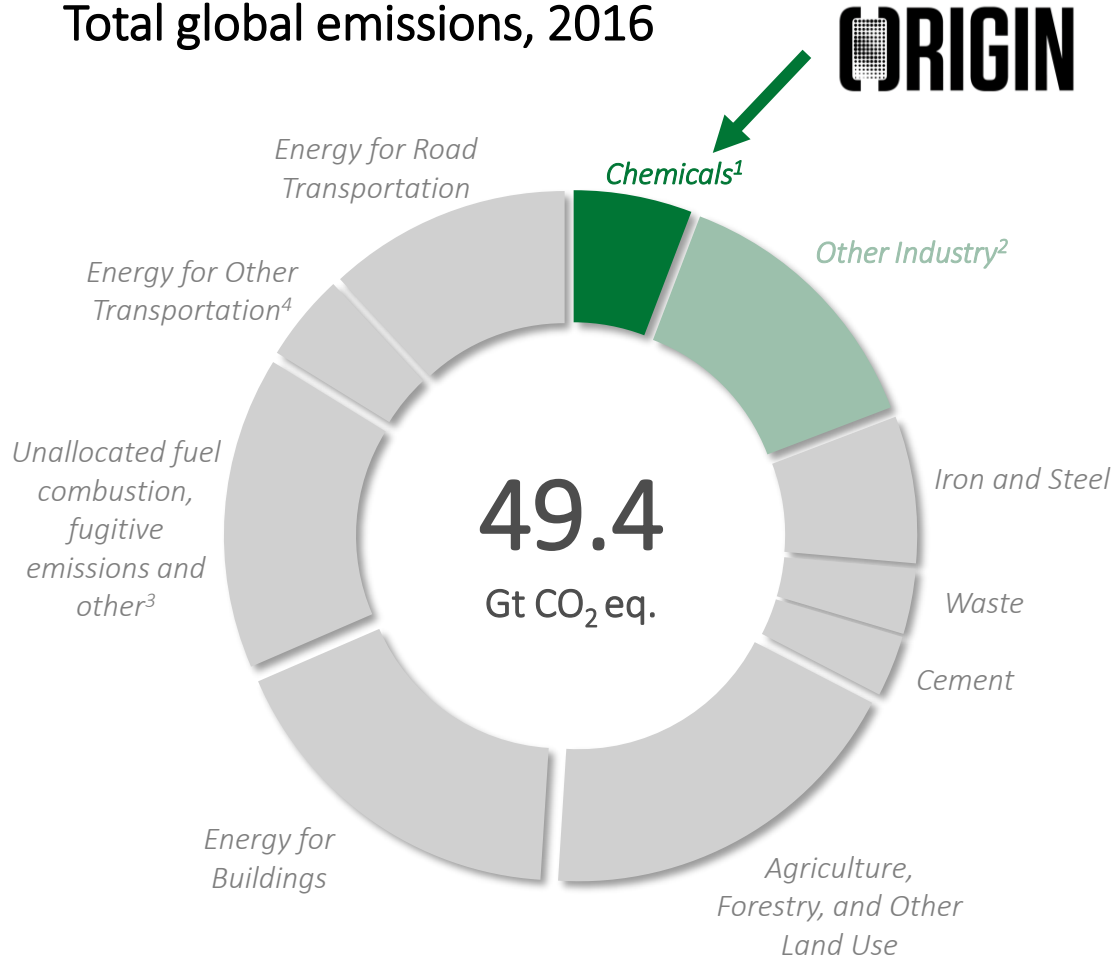
**Nike**  
Net zero by 2050



**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.

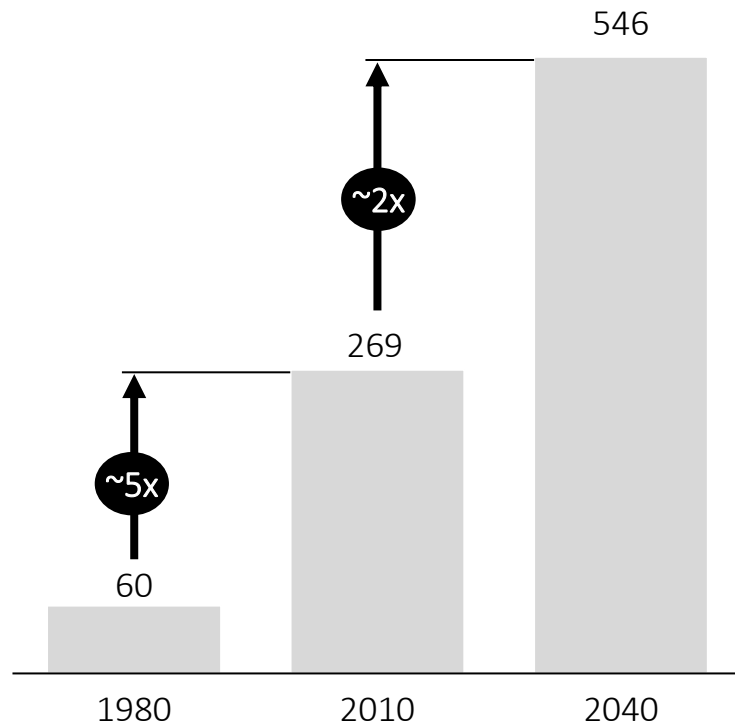
Source: Origin Materials estimates, Climate Watch, the World Resources Institute (2020), ourworldindata.org.

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

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

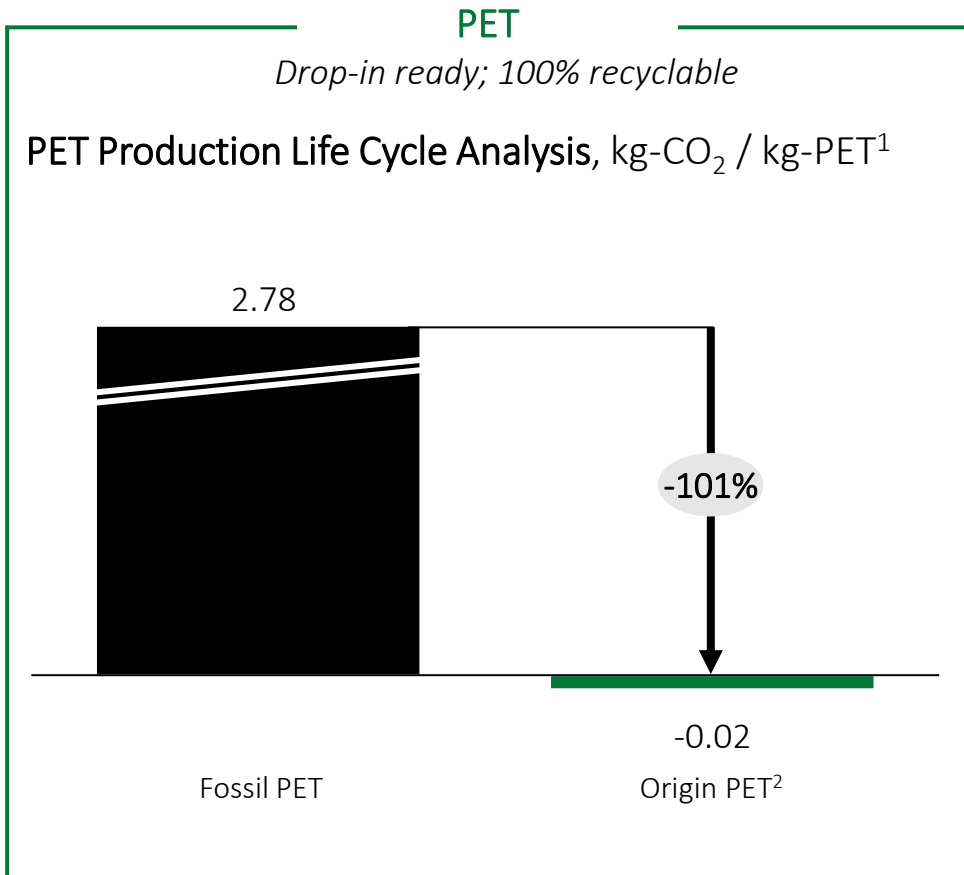
Solid fuels





Agriculture & soil products

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



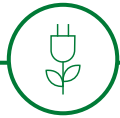
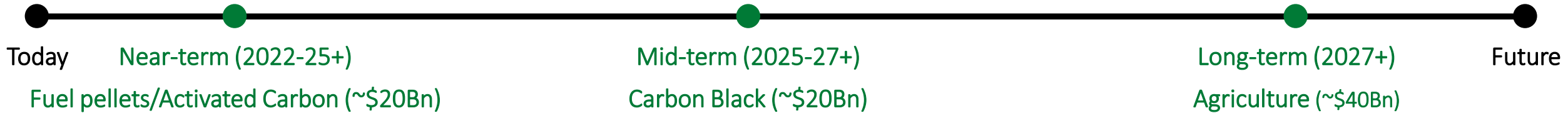
**PEF**  
*Technology is ready; timing dependent on market adoption*

- High-Performance ✓
- Strong Gas Barrier Properties ✓
- High Heat Resistance ✓
- 100% Recyclable<sup>3</sup> ✓
- Degradable<sup>4</sup> ✓

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

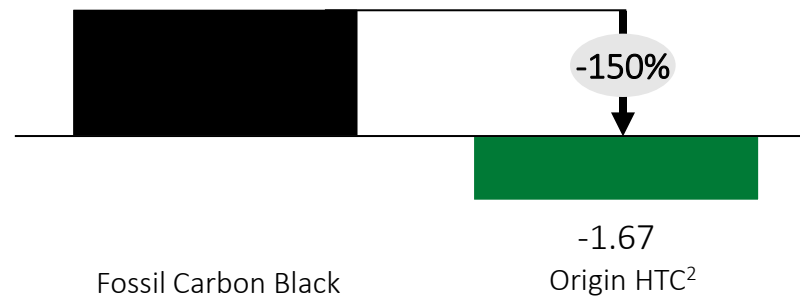
**>8%** Annual growth rate of activated carbon market



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

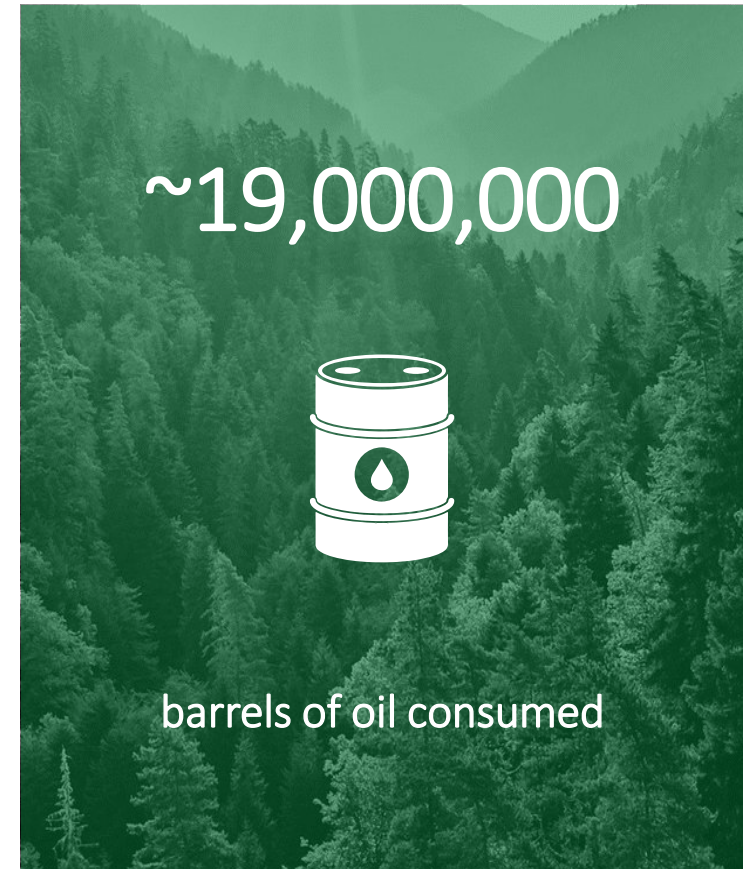
### Applications

- 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'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.

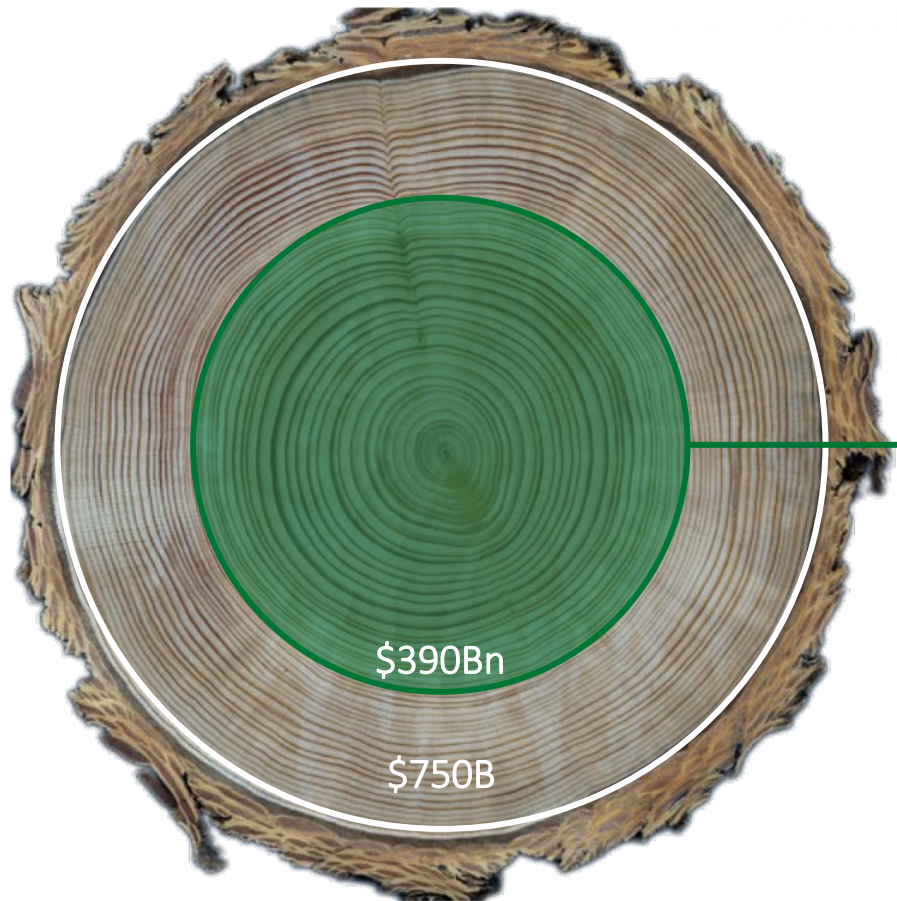


# Estimated total addressable market for Origin products is more than \$1Trn

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

PackagingNews

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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.

# 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



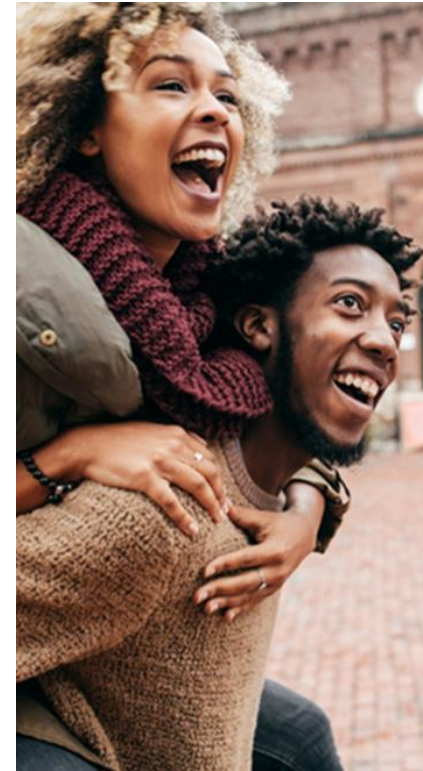


# PrimaLoft Partnership



**“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.

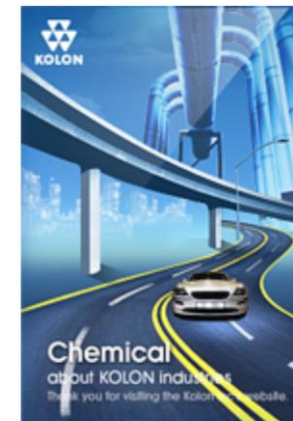
### Industrial Materials



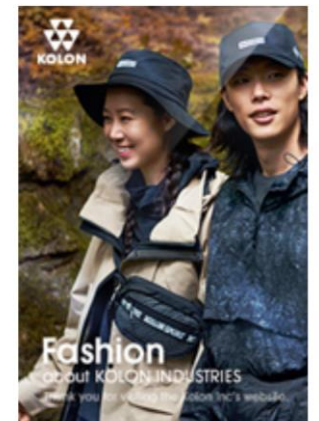
### Film/EM



### Chemicals



### Fashion



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

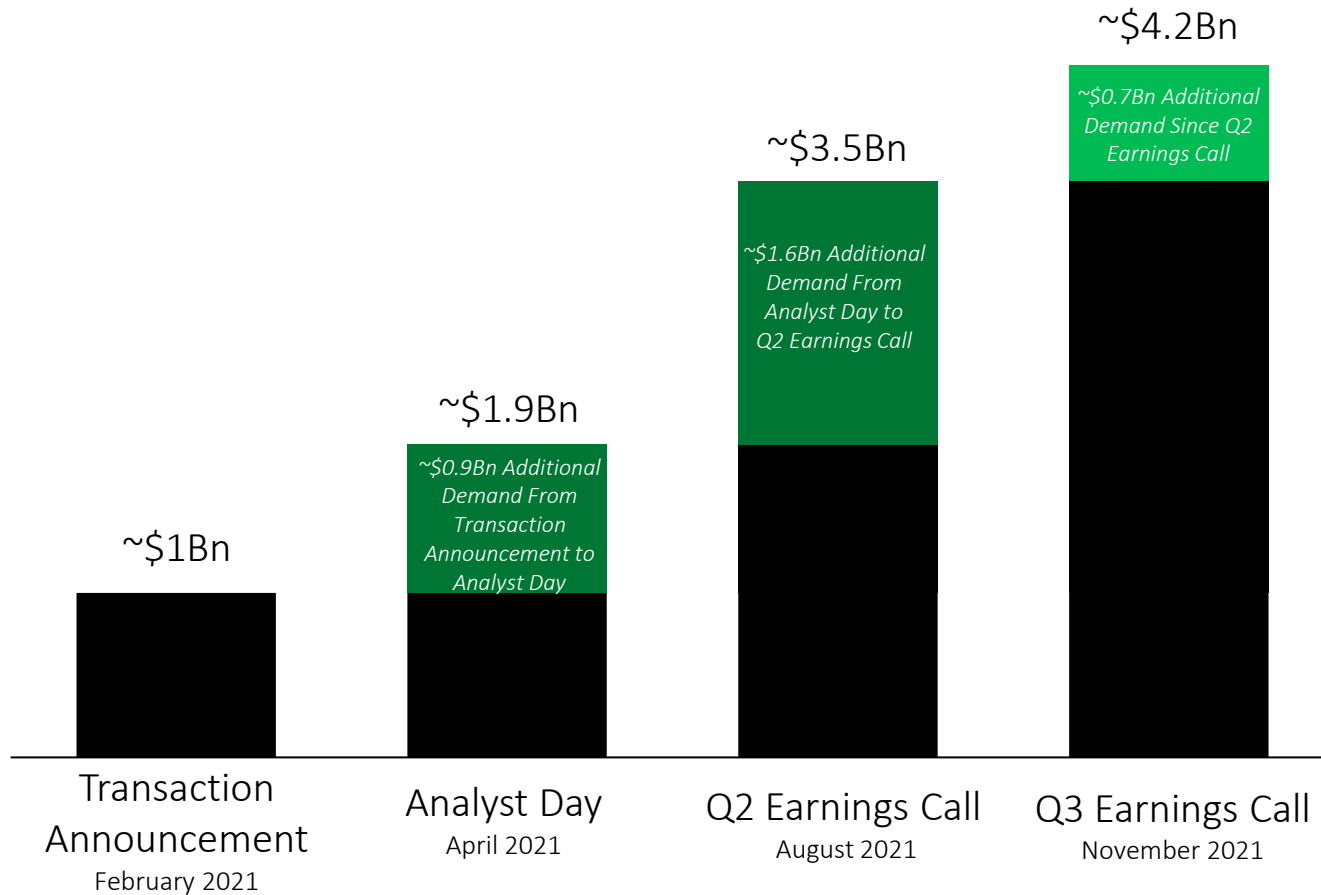
1. Included to indicate Kolon Industries areas of business, but does not imply collaboration or product development activity in every business area



# Origin customer demand has quadrupled to \$4.2Bn since February announcement to go public

Total demand is \$4.2Bn in either offtake agreements or capacity reservations<sup>1</sup>

Customer Demand, \$Bn cumulative



Select Origin Customers & Partners

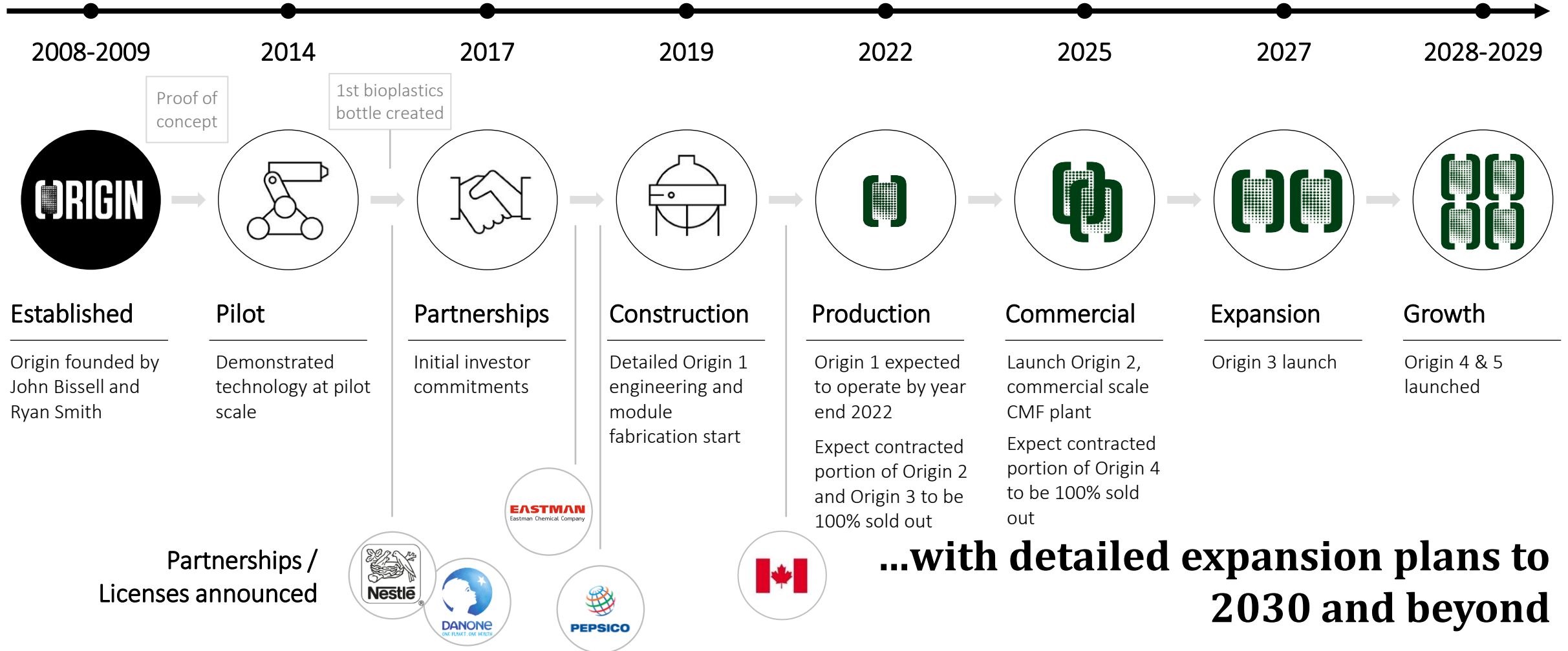


1. Includes \$264Mn specified as customer option. Figures assume maximum offtake amounts and exercise of full customer option.

Source: Origin Materials.

As previously reported in the Q3 2021 Earnings Presentation of Origin Materials, Inc. dated November 11, 2021.

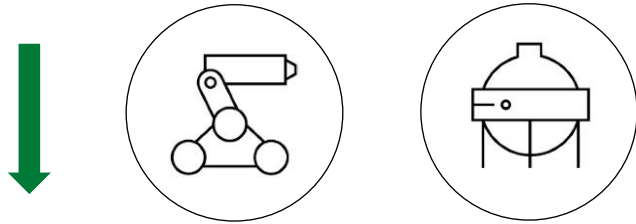
# Origin is building on a strong foundation toward rapid growth...



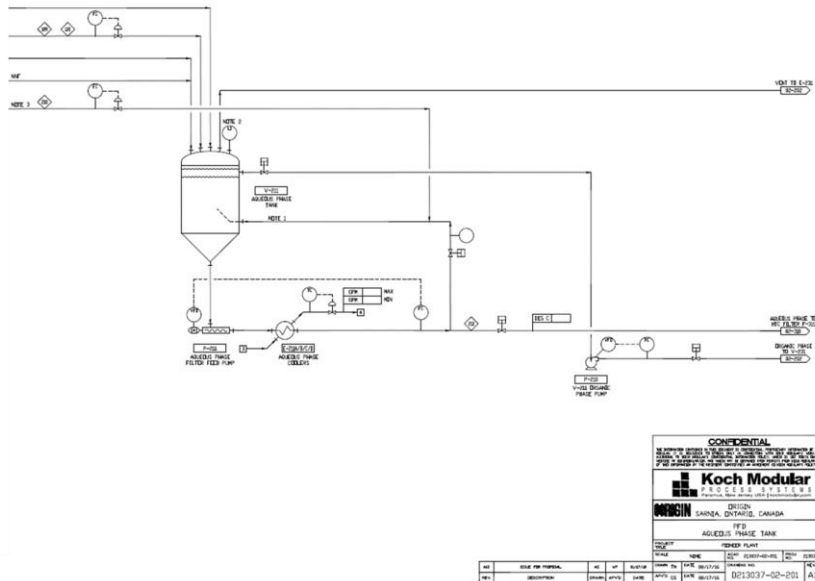
**...with detailed expansion plans to 2030 and beyond**

# Construction - Origin 1 story (1 of 2)

>10 years bench/pilot scale chemistry & engineering



Origin 1 design



Origin 1 core technology module fabrication





# Construction - Origin 1 story (2 of 2)



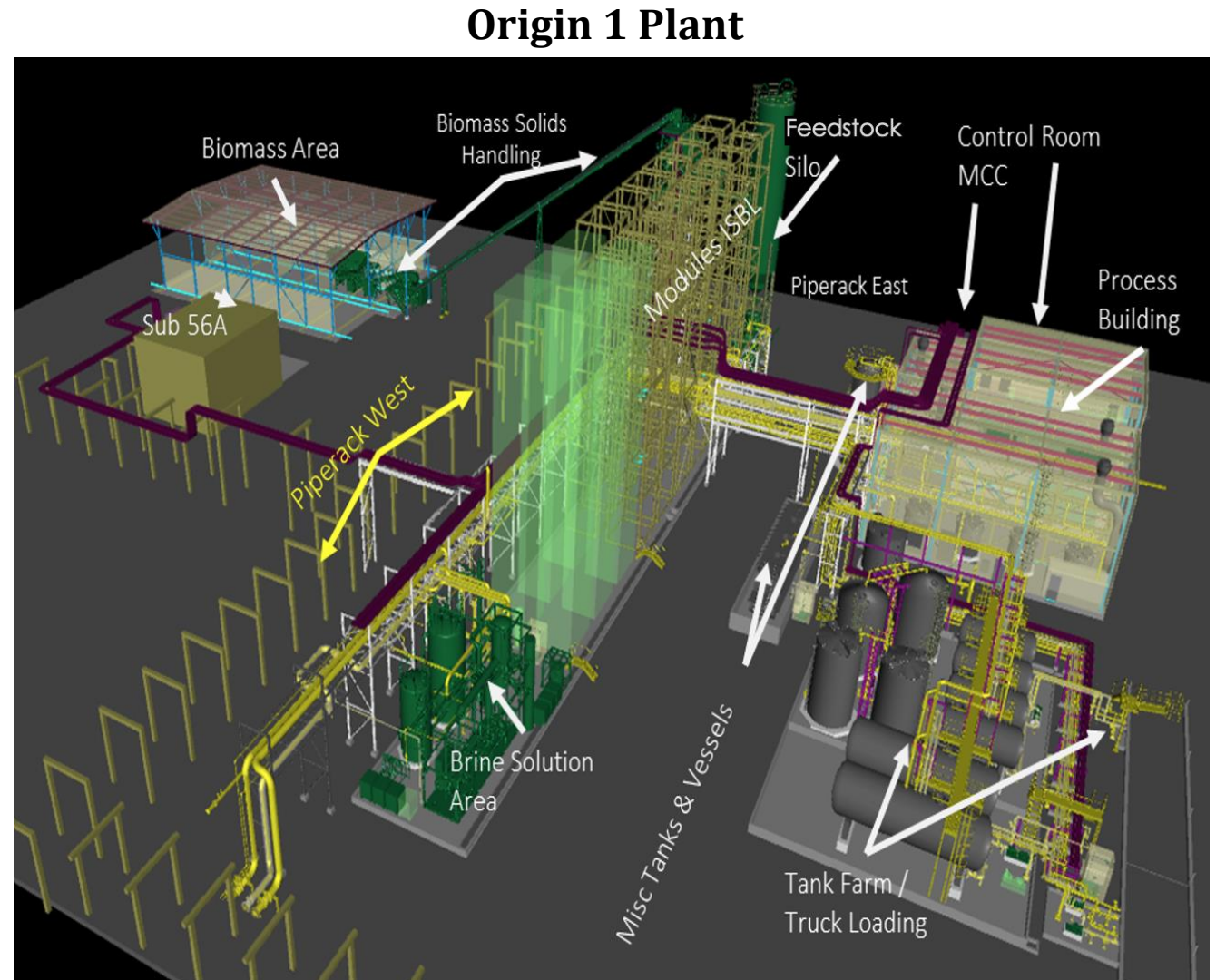
**Foundations**



**Tanks & other equipment**



**Core technology modules**



# Construction – Origin 1 update (1 of 4)

## Module installation milestone achieved ahead of schedule

Lifting and installation of 17 previously fabricated key production equipment modules was completed in October 2021, 6 months ahead of schedule as announced in April 2021. Origin 1 expected to complete by end of 2022.

Pre Module Installation (Week of October 11<sup>th</sup>, 2021)



Post Module Installation October (Week of October 25<sup>th</sup>, 2021)





# Construction – Origin 1 update (2 of 4)

Additional construction – Tank farm area

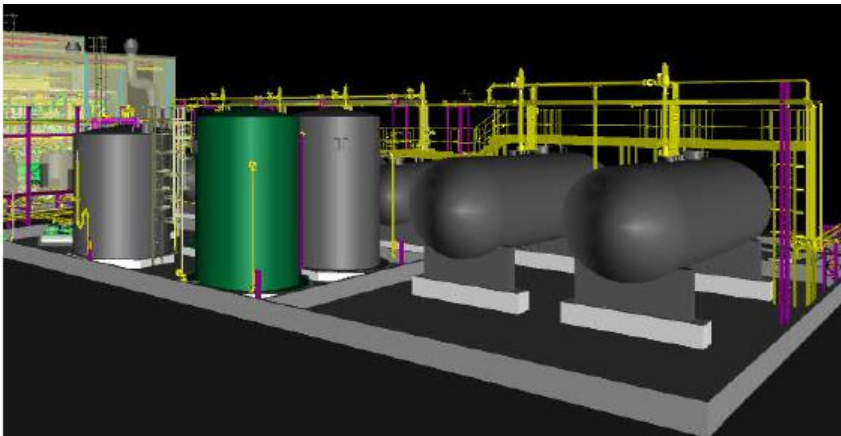
July 20<sup>th</sup>, 2021



October 13<sup>th</sup>, 2021 (Water, Vegetation and Mud Removed, Backfilled, and Concrete Slab and Walls Poured)



Future: Tank Farm 3-D Model



Future: 3-D Model Hologram Projection of Tank Farm





# Construction – Origin 1 update (3 of 4)

Additional construction – Process building foundation pour (process building will house horizontal modules)

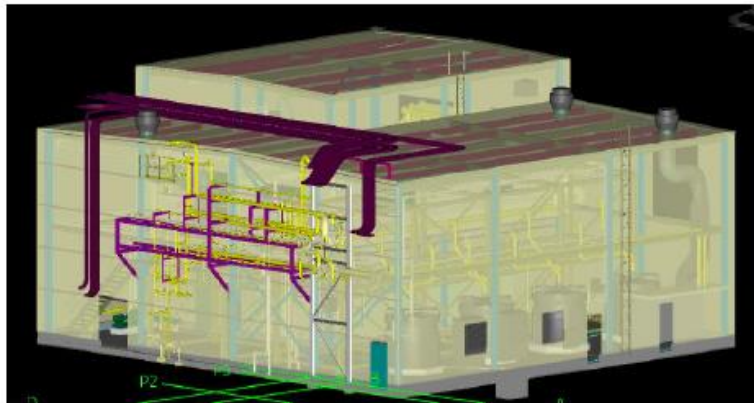
July 22<sup>nd</sup>, 2021 (Foundation Perimeter Poured, Rebar Installed)



October 29<sup>th</sup>, 2021 (Foundation Concrete Slab Poured, Horizontal Core Process Modules Installed)



Future: Process Building 3-D Model



Future: 3-D Model Hologram Projection of Process Building, Which Will House Horizontal Modules (Not Shown) and Additional Equipment



# Construction – Origin 1 update (4 of 4)

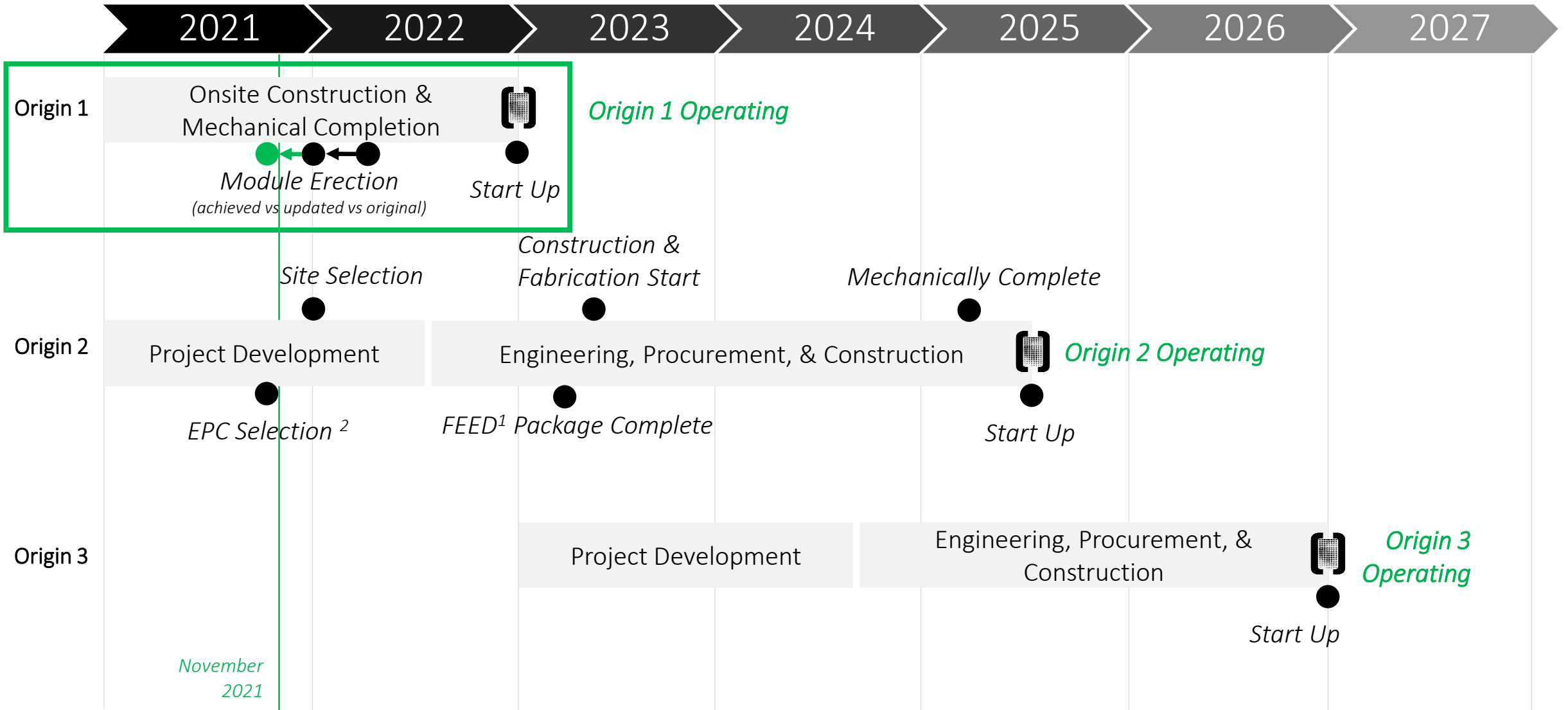
Module installation milestone achieved ahead of schedule

All 17 core process modules installed successfully, 6 months ahead of schedule announced in April 2021.





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



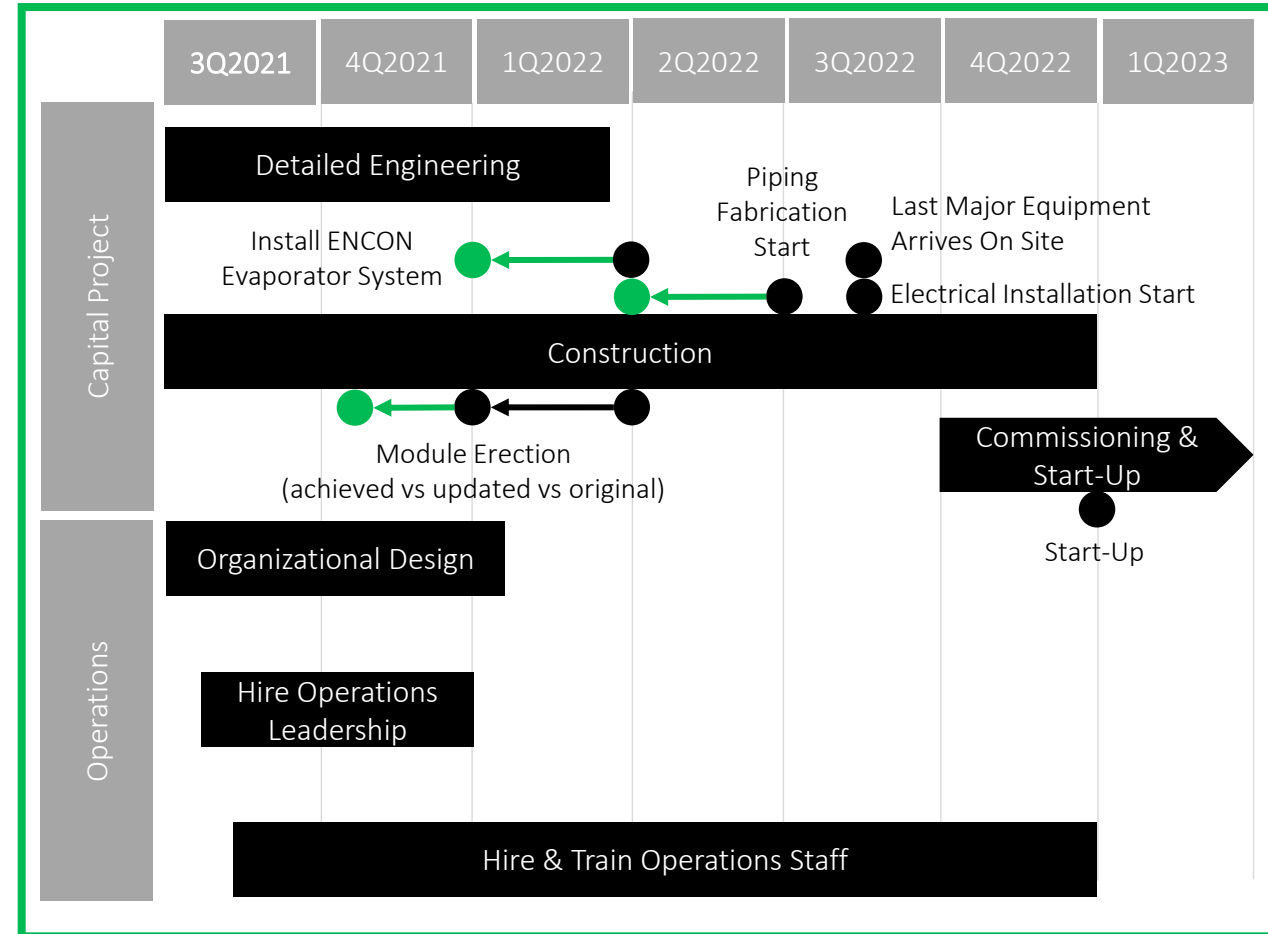
1. Front-end engineering design.  
2. See slide 31 for details.



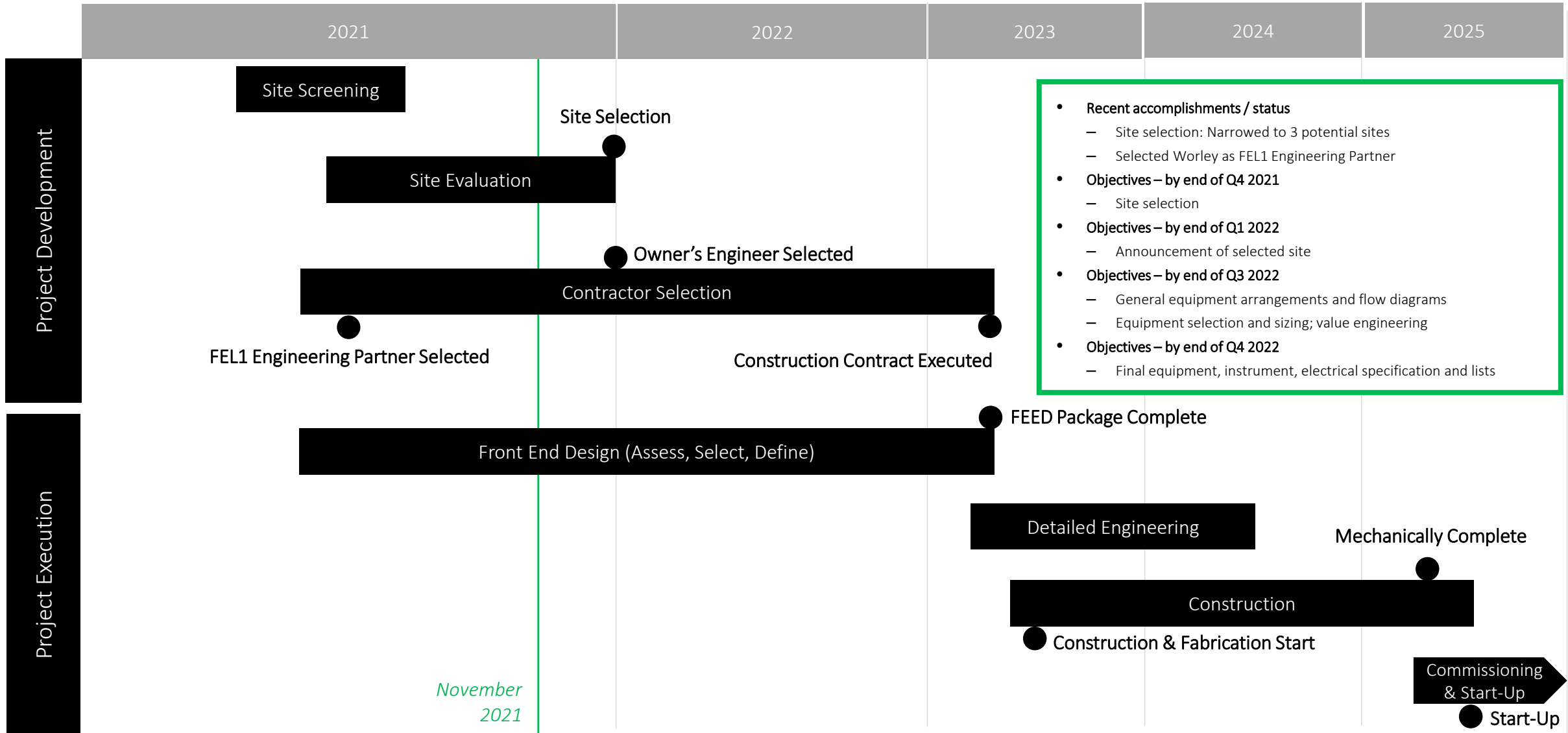
# Construction schedule – Origin 1

- Origin 1 – plant purpose
  - Produce CMF and HTC at commercial volumes
  - Produce CMF and HTC and other intermediates in volumes that allow customers to qualify products and applications other than PET
- Objectives – by end of Q3 2021
  - Achieve activities required to enable module lift by end of Q4 2021 **DONE**
  - Hire Process Automation Lead, additional Project Manager/ Project Engineer **DONE**
- Objectives – by end of Q4 2021
  - Hire Origin 1 operating leadership: Site & Plant Director, Operations Manager, Site EHS&S (Environmental Health, Safety, and Security) Manager **DONE**
  - Complete structural elements of plant ISBL and complete foundations of auxiliary process buildings
  - Erect main plant modules **DONE**
  - Install ENCON evaporator module system **BROUGHT FORWARD** (Previous: Receive ENCON evaporator module system by end of Q1 2022)
- Objectives – by end of Q1 2022
  - Receive additional major equipment (tanks, etc.)
  - Piping fabrication start **BROUGHT FORWARD** (Previous: By end of Q2 2022)
- Objectives – by end of Q2 2022
  - 1<sup>st</sup> round of operations hiring (Admin, Head of Shift Operators, Manufacturing QA/QC Lead)
- Objectives – by middle of Q3 2022
  - Electrical installation start
  - Last major equipment arrives on site
- Objectives – by beginning of Q4 2022
  - First system turnovers to commissioning and start-up team

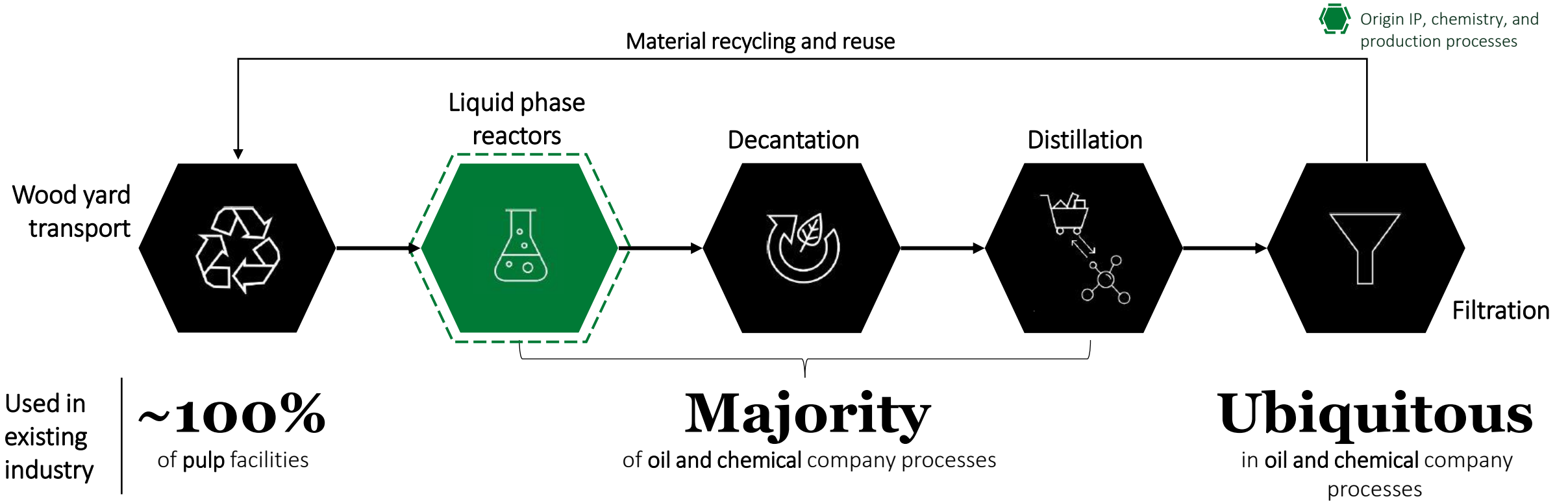
Origin 1 Timeline (Detail View)



# Construction schedule – Origin 2



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



**19** Patent families protect unique CMF and HTC production processes

**Zero**

untested mechanical processes required for operations / scale-up<sup>1</sup>

1. 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.



# 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

# Origin has meaningful advantages over bioplastics companies

✓ Origin advantaged category vs. non-fossil competitors

	ORIGIN	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



**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



**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



**Ryan Smith**  
Co-Founder & CTO

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



**Mako Masuno, PhD**  
VP of R&D

- Pathway Development & Optimization Expert
- Organic Chemistry Professor



**Roman Wolff**  
VP of Engineering

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



**Josh Lee**  
General Counsel

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

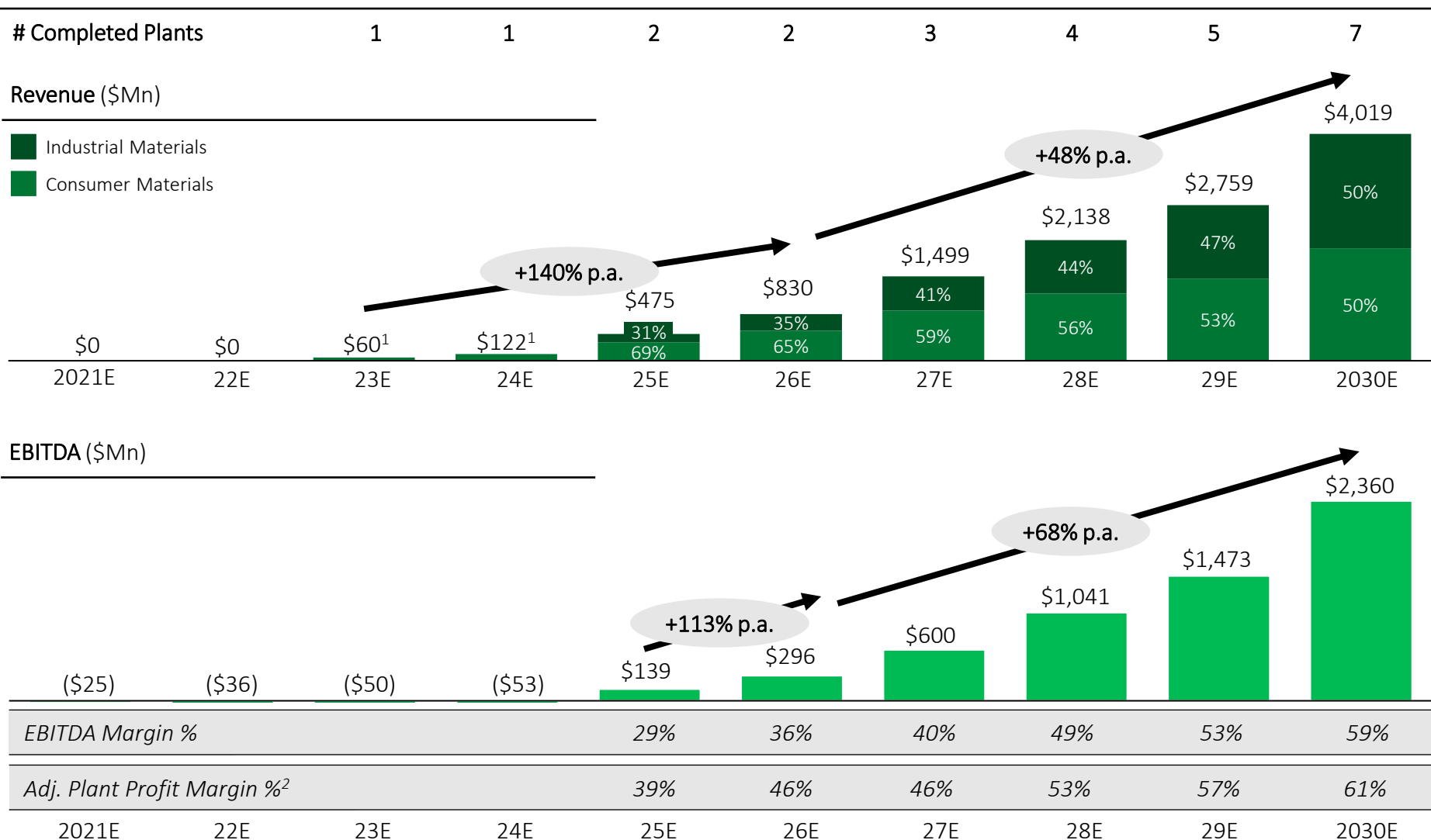






**Appendix A:  
Previously Disclosed  
Financial Details  
(Analyst Day 4/19/21,  
8-K, 10-Q Filings)**

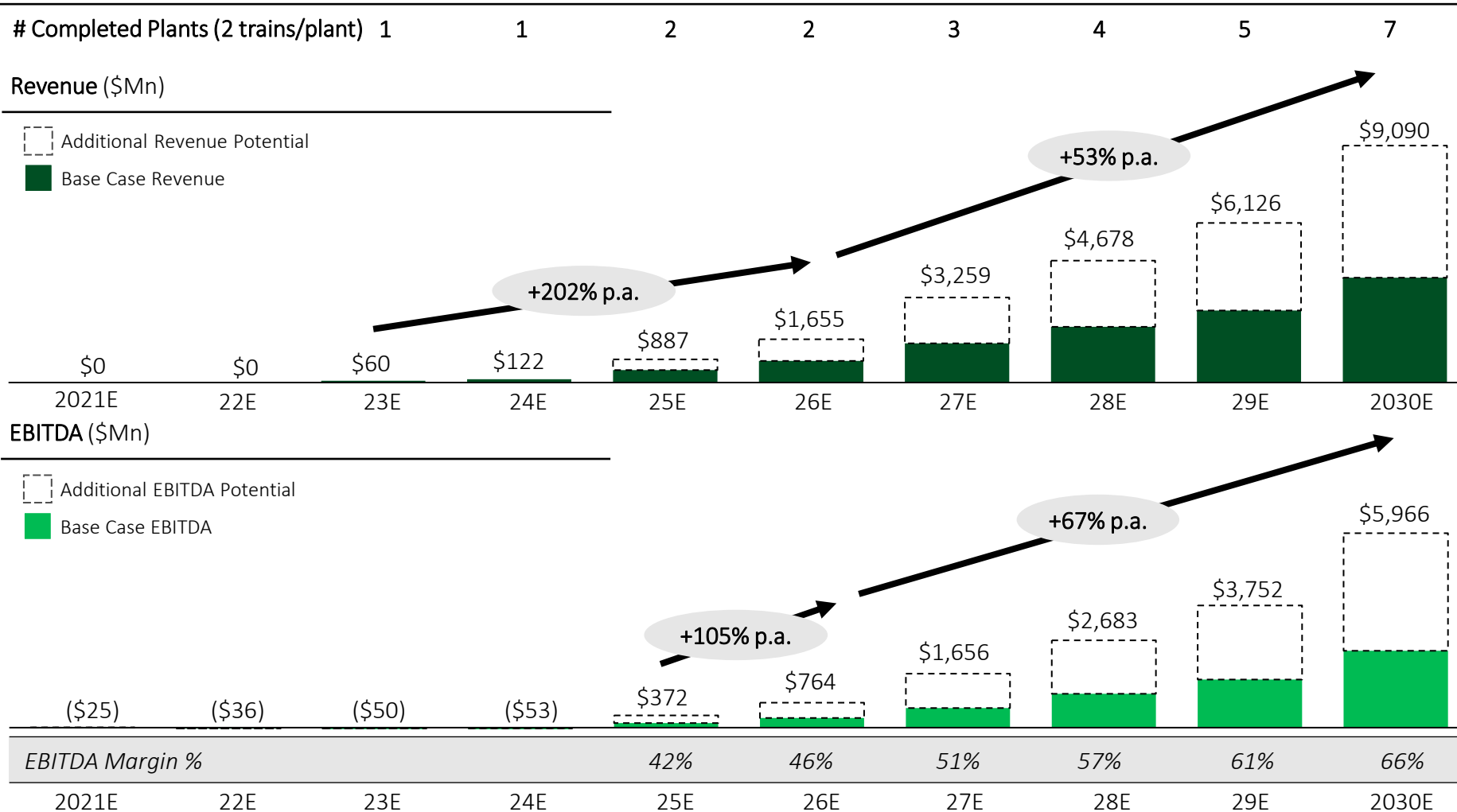
# Origin expects to deliver a superior financial profile for years to come



- 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			\$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)
<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 on May 25, 2021.

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

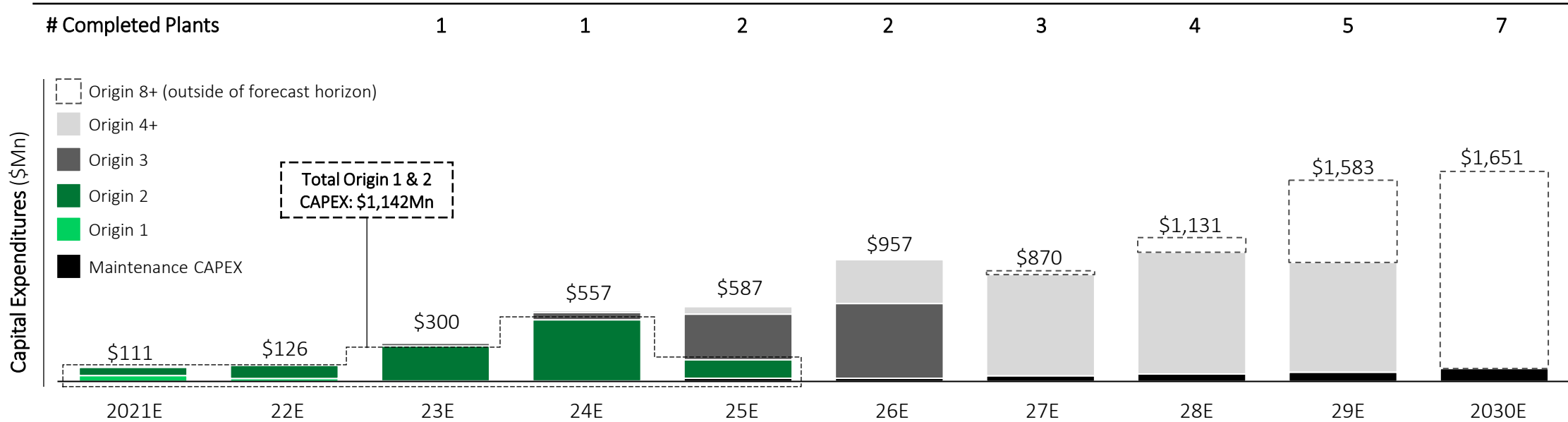
## Cash Flow Sources & Uses from 2021E to Origin 2 Revenue in 2025E (\$Mn)

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 9/30/2021

<u>Class</u>	<u>Outstanding Shares of Common Stock</u>
<b>Total Shares Outstanding<sup>1</sup></b>	<b>136,754,685</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>141,254,685</b>
	<u>Shares Reserved for Future Issuance Pursuant to Potential Earnouts, Outstanding Warrants, and Options</u>
Public Warrants <sup>2</sup>	24,150,000
Private Warrants <sup>2</sup>	11,326,667
Legacy Origin Earnout Shares <sup>3</sup>	25,000,000
Options <sup>4, 5</sup>	7,939,741
<b>Total Shares<sup>5</sup></b>	<b>209,671,093</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 6,458,210 options with a weighted average strike price of \$0.21/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). 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 expense, net of capitalized interest, (iv) change in fair value of derivative liability, (v) change in fair value of warrants liability, (vi) change in fair value of earnout liability, and (vii) other income, net.

(in thousands)	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Net Income (loss)	\$ 27,893	\$ (3,106)	\$ 36,853	\$ (6,769)
Stock based compensation	636	60	4,808	78
Depreciation and amortization	126	102	363	306
Interest expense, net of capitalized interest	—	54	2,839	167
Change in fair value of derivative liability	—	67	1,426	52
Change in fair value of warrants liability	(13,481)	1,024	7,363	1,128
Change in fair value of earnout liability	(21,511)	—	(67,008)	—
Professional fees related to completed mergers	640	—	640	—
Other income, net	(27)	(68)	(651)	(237)
Adjusted EBITDA	<u>\$ (5,724)</u>	<u>\$ (1,867)</u>	<u>\$ (13,367)</u>	<u>\$ (5,275)</u>



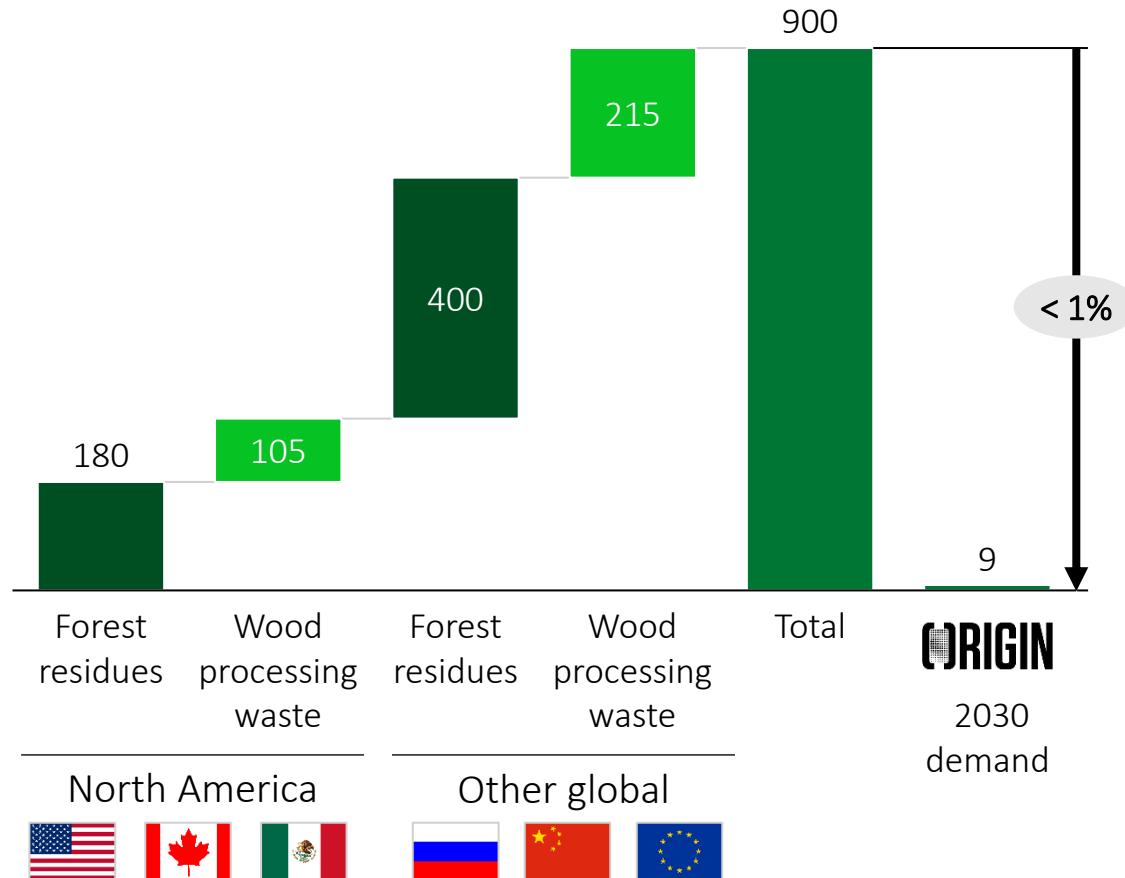
**Appendix B: Other  
Previously Disclosed  
Materials**



# 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

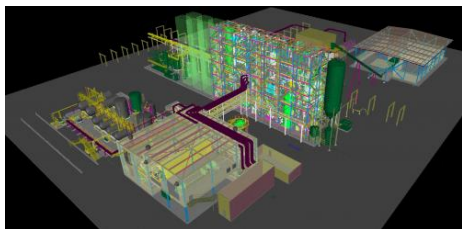
“Putting it all together”

- 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

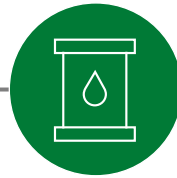
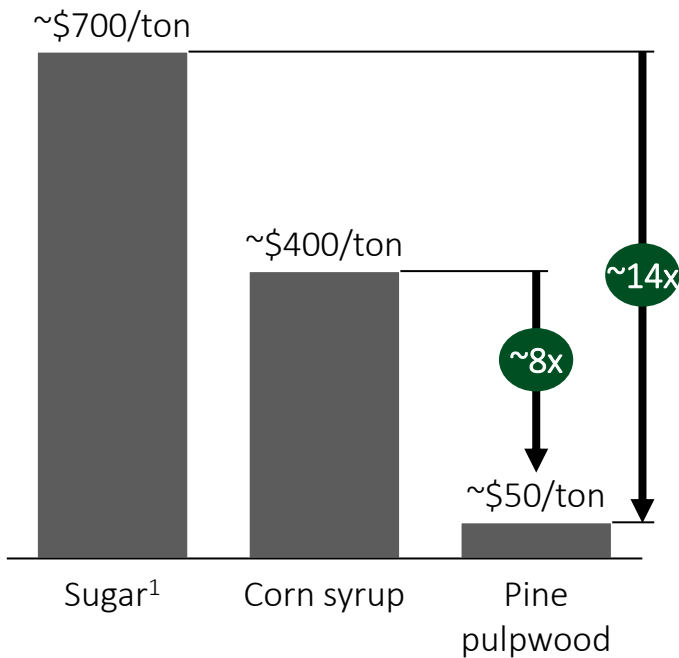
1. Origin Materials may or may not be in discussions with these parties.  
 Source: Origin Materials.  
 As previously reported on a Rule 425 filing of Artius Acquisition, Inc. dated April 19, 2021.

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



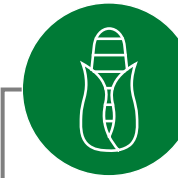
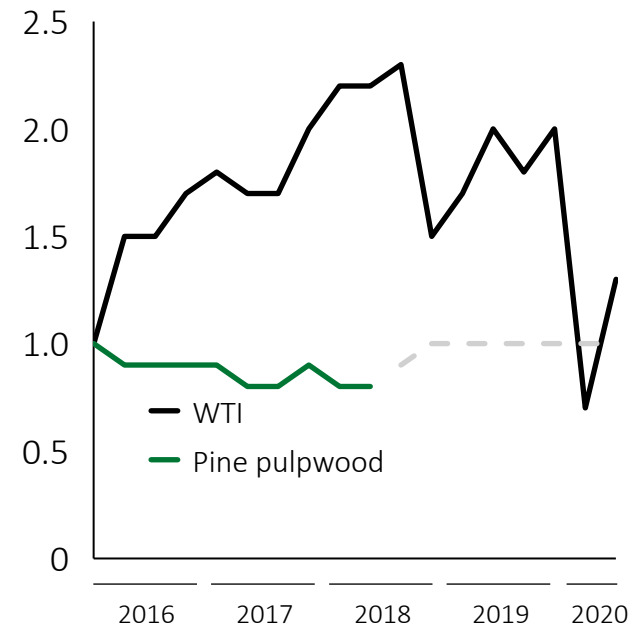
8x-14x cheaper than competing renewable feedstocks

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*