

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

FORM 8-K

CURRENT REPORT

PURSUANT TO SECTION 13 OR 15(D) OF THE
SECURITIES EXCHANGE ACT OF 1934
Date of Report (Date of earliest event reported): November 26, 2024

LanzaTech Global, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction
of incorporation)

001-40282

(Commission File Number)

92-2018969

(I.R.S. Employer
Identification No.)

8045 Lamon Avenue, Suite 400
Skokie, Illinois

(Address of principal executive offices)

60077

(Zip Code)

(847) 324-2400

(Registrant's telephone number, including area code)

Not Applicable

(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communication pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencements communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

Title of each class	Trading Symbols	Name of each exchange on which registered
Common Stock, par value \$0.0001 per share	LNZA	The Nasdaq Stock Market LLC
Redeemable Warrants, each whole warrant exercisable for one share of Common Stock at an exercise price of \$11.50	LNZAW	The Nasdaq Stock Market LLC

- Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).
- If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 7.01 Regulation FD Disclosure

On November 27, 2024, Dr. Jennifer Holmgren, Chair and Chief Executive Officer of LanzaTech Global, Inc. will present at ChemIndex, an international conference and exhibition on chemistry in industry, at Dhahran Expo in the Kingdom of Saudi Arabia. Dr. Holmgren's presentation is titled "Enabling a Circular Carbon Economy".

A copy of the presentation materials is being furnished as Exhibit 99.1.

The information in this Item 7.01 is being furnished and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise be subject to liabilities under that section, and shall not be deemed to be incorporated by reference into any filings of the Company under the Securities Act of 1933, as amended, or the Exchange Act, regardless of any general incorporation language in such filings. This Current Report on Form 8-K shall not be deemed an admission as to the materiality of any information in this Item 7.01.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits

Exhibit Number	Description
99.1	LanzaTech, Inc. Presentation "Enabling a Circular Carbon Economy", Nov 27, 2024.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: November 26, 2024

LANZATECH GLOBAL, INC.

By: /s/ Joseph Blasko
Name: Joseph Blasko
Title: General Counsel and Corporate Secretary

LanzaTech

Nasdaq: LNZA

ENABLING A CIRCULAR CARBON ECONOMY
November 2024

Dr. Jennifer Holmgren, CEO



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DISCLAIMER

These slides and any accompanying oral presentation contain forward-looking statements. All statements, other than statements of historical fact, included in these slides and any accompanying oral presentation are forward-looking statements reflecting management's current beliefs and expectations. In some cases, you can identify forward-looking statements by terminology such as "will," "anticipate," "expect," "believe," "intend" and "should" or the negative of these terms or other comparable terminology. Forward-looking statements in these slides and any accompanying oral presentation include, but are not limited to, statements about estimates and forecasts of other financial and performance metrics and projections of market opportunity, expectations and timing related to the rollout of our business and timing of deployments, customer growth and other business milestones. These statements are based on various assumptions, whether or not identified in this presentation, and on the current expectations of our management and are not predictions of actual performance. These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. The potential risks and uncertainties that could cause actual results to differ from the results predicted include, among others, those risks and uncertainties included under the captions "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Form 10-K filed with the Securities and Exchange Commission and subsequent annual reports, quarterly reports and other filings made with the Securities and Exchange Commission from time to time. Any forward-looking statements contained herein are based on assumptions that we believe to be reasonable as of the date hereof. Except as required by law, we assume no obligation to update these forward-looking statements, even if new information becomes available in the future.

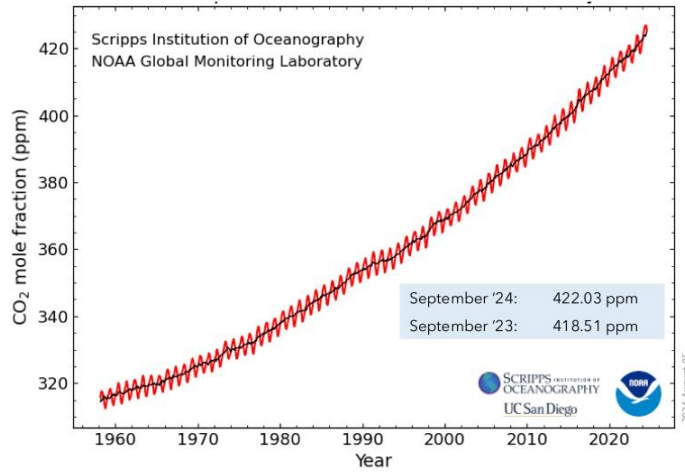
This presentation includes data obtained from third-party studies and internal company surveys prepared for other purposes. The company has not independently verified the data obtained from these sources. Forward-looking information obtained from these sources is subject to the same qualification and the additional uncertainties regarding the other forward-looking statements in this presentation.

This presentation contains trademarks, service marks, trade names, and copyrights of ours and of other companies, which are the property of their respective owners. The use or display of third parties' trademarks, service marks, trade name or products in this presentation is not intended to, and does not imply, a relationship with us, or an endorsement or sponsorship by or of LanzaTech. Solely for convenience, the trademarks, service marks and trade names referred to in this presentation may appear with the TM or SM symbols, but such references are not intended to indicate, in any way, that LanzaTech will not assert, to the fullest extent permitted under applicable law, their rights or the right of the applicable licensor to these trademarks, service marks and trade names.

ATMOSPHERIC CO₂ PARTS PER MILLION

Mauna Loa Observatory, Hawaii Monthly Average Carbon Dioxide Concentration

Last updated: September 2024









Sustainable Brands, San Diego 2015
Winner, Target Innovation Open and People's Choice Award



**...that Steel emissions
 could become your
 shoes**

LanzaTech

WE MADE IT REAL

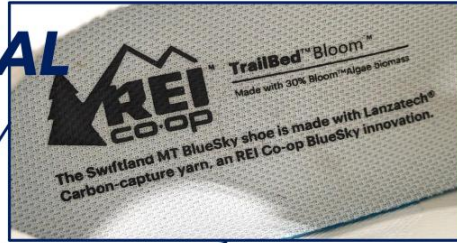


Image credit: REI & Chalpisit Ice Klattisewee (X)

2024 LanzaTech



ISPO
Award
2022
Winner



 **CRAGHOPPERS**

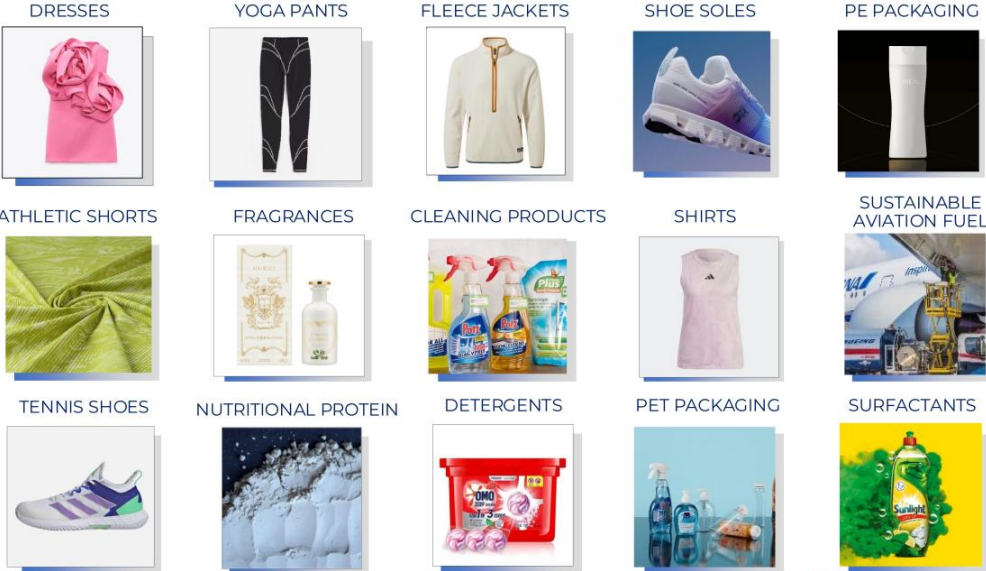
LanzaTech



Fabric + Care

- 75% Polyester/25% Spandex
- RECYCLED MATERIAL: Made with 75% polyester partially derived from recycled carbon emissions in partnership with LanzaTech.
- BREATHABLE: Airflow moves easily through the garment
- QUICK-DRYING: Dries in a flash for ultimate comfort when breaking a sweat
- WICKING: Pulls sweat away from the body to the surface of the fabric so it can evaporate
- Machine wash and dry.
- Imported.

REAL DREAMS



COTY SINCE 1904
 ZARA
M MICROBES
 miBelle
CRAGHOPPERS
 U Unilever
L'ORÉAL
g virgin atlantic
 Virgin
#AM MOVE
 Ω

LanzaTech

2016: SHOUGANG, START OF CONSTRUCTION



2016 Groundbreaking





2017 Reactor Construction

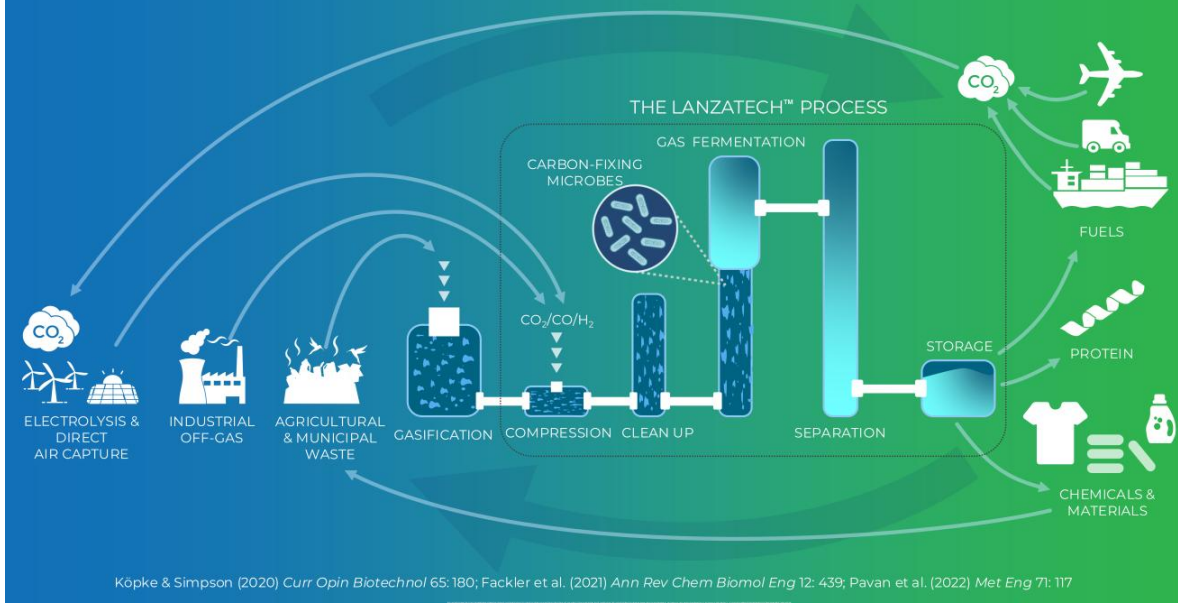
2018: SHOUGANG, PLANT STARTUP



TODAY: 6 COMMERCIAL FACILITIES IN EUROPE & ASIA

 <p>2018</p> <p>Production Volume: 46,000 Tonnes per Year Ethanol</p> <p>Carbon Source: Steel Mill Emissions</p> <p>ISCC, ISCC, ISCC, RSB</p>	 <p>2021</p> <p>Production Volume: 46,000 Tonnes per Year Ethanol</p> <p>Carbon Source: Ferroalloy Emissions</p> <p>ISCC, ISCC</p>	 <p>2022</p> <p>Production Volume: 60,000 Tonnes per Year Ethanol</p> <p>Carbon Source: Ferroalloy Emissions</p> <p>ISCC, ISCC, ISCC</p>
 <p>2023</p> <p>Production Volume: 60,000 Tonnes per Year Ethanol</p> <p>Carbon Source: Ferroalloy Emissions</p> <p>ISCC</p>	 <p>2023</p> <p>Production Volume: 35,000 Tonnes per Year Ethanol</p> <p>Carbon Source: Refinery Off-gas</p> <p>ISCC</p>	 <p>2023</p> <p>Production Volume: 64,000 Tonnes per Year Ethanol</p> <p>Carbon Source: Steel Mill Emissions</p> <p>ArcelorMittal, ISCC</p> <p>LanzaTech</p> <p>13</p>

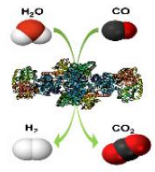
THE LANZATECH PROCESS



ACETOGENS CAN USE A WIDE RANGE OF INPUT GAS COMPOSITIONS

Gas Composition		H ₂ :CO Ratio	Energy Efficiency
CO	$6 \text{ CO} + 3 \text{ H}_2\text{O} \rightarrow \text{C}_2\text{H}_5\text{OH} + 4 \text{ CO}_2$	0:1	72.8%
CO + H ₂	$3 \text{ H}_2 + 3 \text{ CO} \rightarrow \text{C}_2\text{H}_5\text{OH} + \text{CO}_2$	1:1	78.5%
CO + H ₂	$4 \text{ H}_2 + 2 \text{ CO} \rightarrow \text{C}_2\text{H}_5\text{OH} + \text{H}_2\text{O}$	2:1	80.6%
CO + H ₂ + CO ₂	$5 \text{ H}_2 + 1 \text{ CO} + 1 \text{ CO}_2 \rightarrow \text{C}_2\text{H}_5\text{OH} + 2 \text{ H}_2\text{O}$	5:1	82.1%
H ₂ + CO ₂	$6 \text{ H}_2 + 2 \text{ CO}_2 \rightarrow \text{C}_2\text{H}_5\text{OH} + 3 \text{ H}_2\text{O}$	1:0	85.2%

Organism making H₂ on demand through **Biological Water-Gas-Shift**



CODH Enzyme

Multiple avenues to reach **maximum carbon utilization** by flexibly adding **Green H₂**



LanzaTech

¹Köpke & Simpson (2020) *Curr Opin Biotechnol* 65:180

Carbon is in

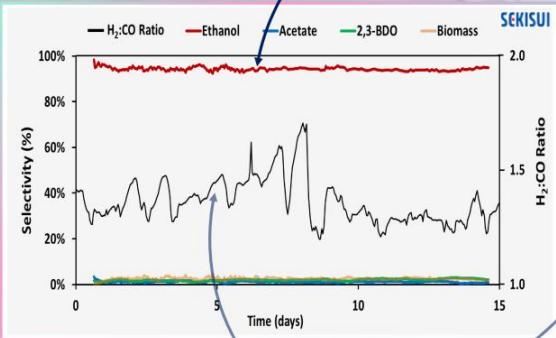


trash!

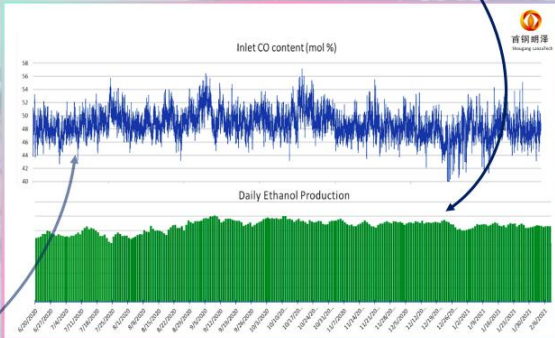
CONTINUOUS & STABLE OPERATION ON VARIETY OF FEED GASES

SPECIFIC, NEAR-CONSISTENT ETHANOL PRODUCTION

INPUT: MUNICIPAL SOLID WASTE¹



INPUT: STEEL MILL GAS²



INCONSISTENT WASTE CARBON INPUT

¹Köpke & Simpson (2020) *Curr Opin Biotechnol* 65: 180; ²Fackler et al. (2021) *Ann Rev Chem Biomol Eng* 12: 439

FEEDSTOCK VERSATILITY: SOLID WASTE (MUNICIPAL)

A decade of scale-up collaboration



Pilot with commercial gasifier-run for 8 years

SEKISUI



1/10th scale pre-commercial facility

LanzaTech

**MUNICIPAL SOLID WASTE:
ON THE ROAD TO COMMERCIALIZATION**

SEKISUI

2013

Pilot Operations

Volume: 15 TPA

Carbon Source:
MSW

2022

**Pre-Commercial
Operations**

Volume: 500 TPA

Carbon Source:
MSW

202X

**Multiple Expected
Commercial
Operations**

Volume: 12,000 TPA

Carbon Source:
MSW

LanzaTech

WE CREATE
CIRCULARITY



LanzaTech



Chemicals

Underpin our way of life



Chemical Production Directly Impacts
every part of the global community

ETHYLENE

*The World's Most Important Chemical**

\$200 Billion

global ethylene market size by 2030¹

Ethylene is a precursor to produce myriad products like packaging, textiles, antifreeze, building materials, medical devices, tires, insulation...and is also utilized in the 1st step of the Alcohol-to-Jet process to produce Sustainable Aviation Fuel



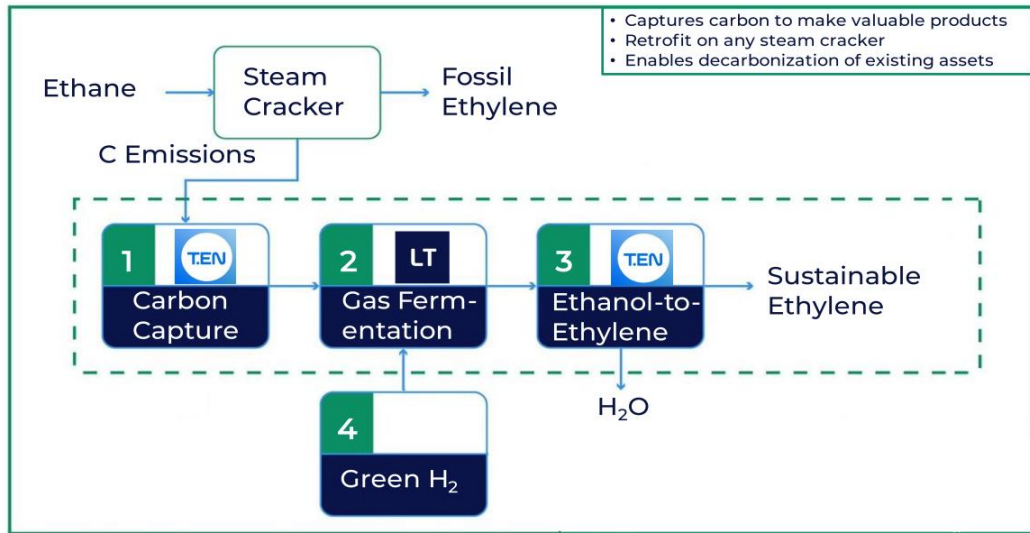
* American Fuel and Petrochemical Manufacturers Association
1 Ethylene global market - 2019, The Business Research Company
2 S&P Global, 2022

~370

ethylene-producing steam crackers globally

260 million

tonnes of annual CO₂ emissions from ethylene production²



OCED
Office of Clean Energy Demonstrations

Project SECURE selected by U.S. DOE to receive \$200 million award

PROPYLENE

\$160+ Billion

global propylene market size by 2034¹

Propylene is a building block for packaging, medical supplies, automotive products and many other applications



¹ Precedence Research, Propylene Market Size, Share and Trends, 2024 to 2034



FUTURE PRODUCTION OF COMMODITY CHEMICALS
Retrofit of existing assets to decarbonize outputs

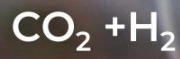
$\text{CO}_2 + \text{H}_2$



ETHYLENE

POLYPROPYLENE

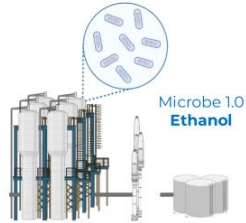
WHERE WE'RE HEADED: DIRECT PRODUCTION
Retrofit of existing assets to decarbonize outputs



ETHYLENE
POLYPROPYLENE

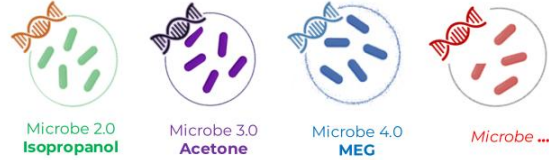
"Hardware"

Existing Commercial Plants



"Software"

New Strains To Expand Product Portfolio & Efficiency



✓ Same reactor

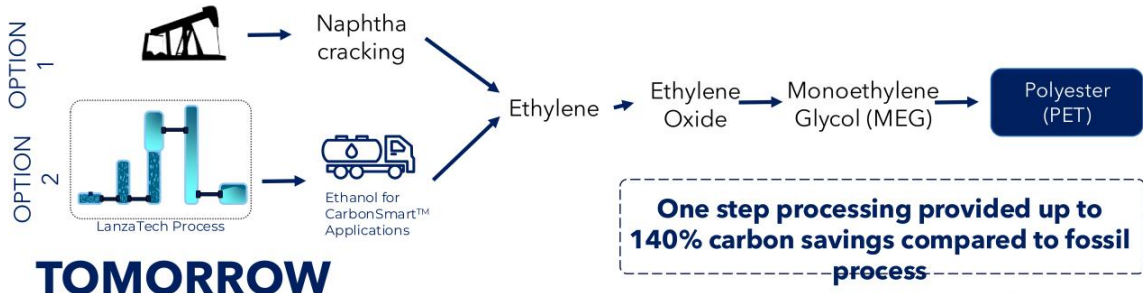
✓ Same feedstock

✓ Same process

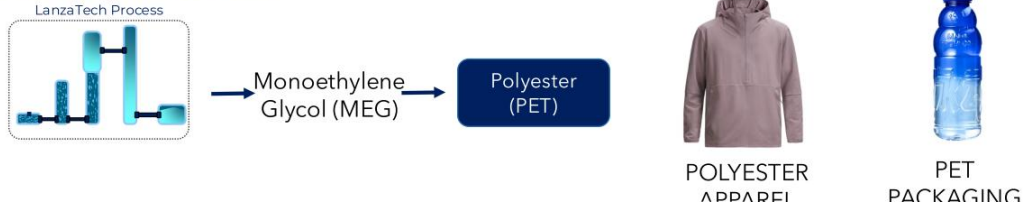
LanzaTech



TODAY



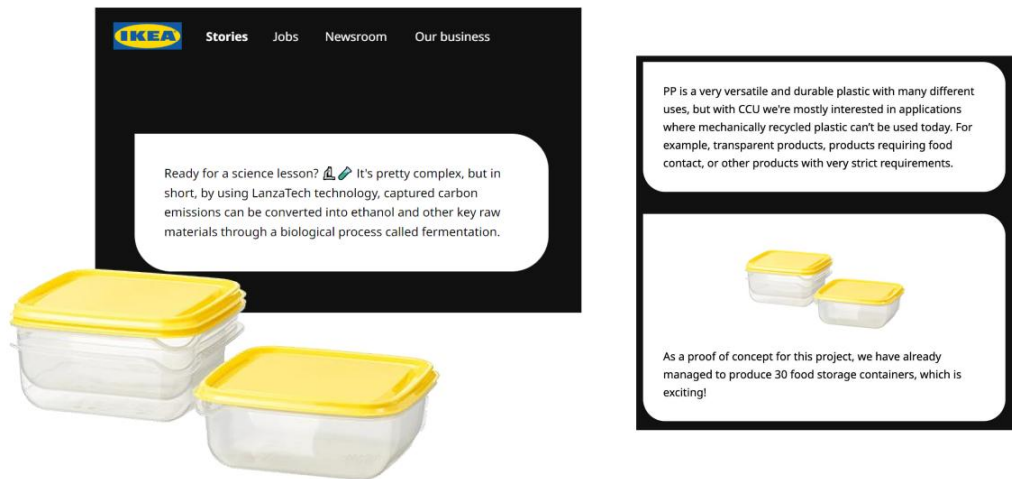
TOMORROW



LanzaTech

ADDITIONAL ONE STEP PROCESSING: PP FOOD CONTAINERS

LanzaTech & IKEA are developing a commercial pathway to produce polypropylene (PP) for use in food-grade containers and beyond



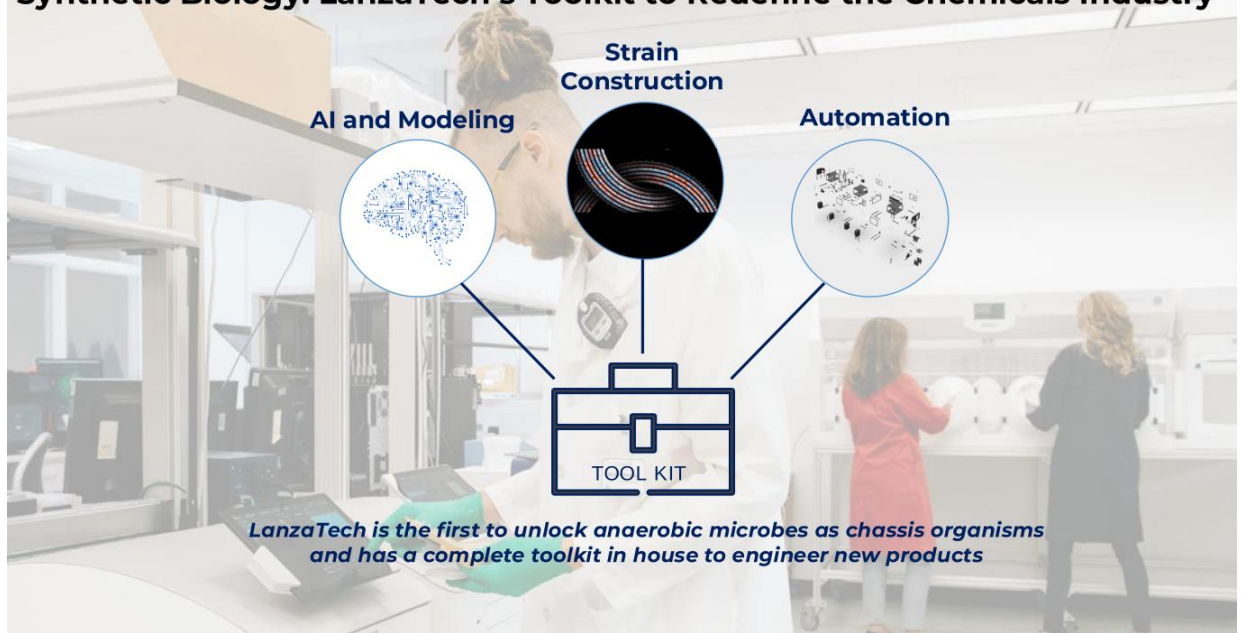
The image shows a screenshot of an IKEA website article. At the top, there is a navigation bar with the IKEA logo and links for 'Stories', 'Jobs', 'Newsroom', and 'Our business'. Below the navigation bar, there is a main text area with a white background and a black border. The text reads: 'Ready for a science lesson? 🧪 It's pretty complex, but in short, by using LanzaTech technology, captured carbon emissions can be converted into ethanol and other key raw materials through a biological process called fermentation.' To the right of this text, there is a smaller text box with a black background and white text: 'PP is a very versatile and durable plastic with many different uses, but with CCU we're mostly interested in applications where mechanically recycled plastic can't be used today. For example, transparent products, products requiring food contact, or other products with very strict requirements.' Below this text box, there is an image of three food storage containers: two stacked and one separate, all with yellow lids. Below the image, there is another text box with a black background and white text: 'As a proof of concept for this project, we have already managed to produce 30 food storage containers, which is exciting!' In the bottom right corner of the screenshot, the LanzaTech logo is visible, oriented vertically.

Ready for a science lesson? 🧪 It's pretty complex, but in short, by using LanzaTech technology, captured carbon emissions can be converted into ethanol and other key raw materials through a biological process called fermentation.

PP is a very versatile and durable plastic with many different uses, but with CCU we're mostly interested in applications where mechanically recycled plastic can't be used today. For example, transparent products, products requiring food contact, or other products with very strict requirements.

As a proof of concept for this project, we have already managed to produce 30 food storage containers, which is exciting!

Synthetic Biology: LanzaTech's Toolkit to Redefine the Chemicals Industry





Programing Microbes

LANZATECH BIOFOUNDRY - UNLOCKING NON-MODEL ORGANISMS



**AUTOMATED STRAIN
ENGINEERING & SCREENING**
IN CONTEXT OF
ANAEROBIC CONDITIONS &
TOXIC/FLAMMABLE GASES

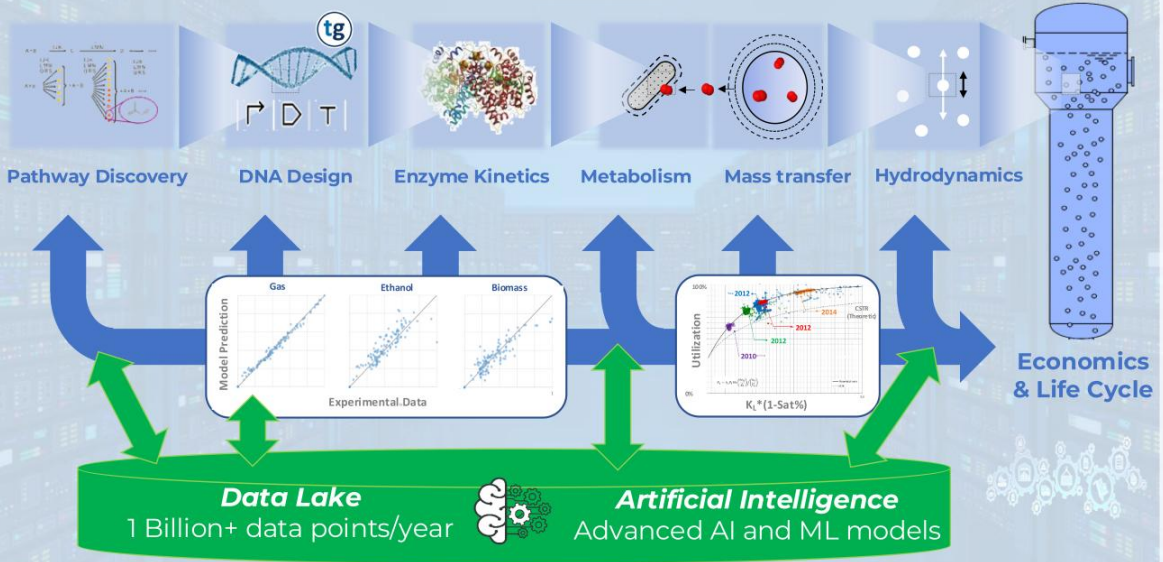
5+ YEARS OF DEVELOPMENT:
100,000+ STRAINS PROTOTYPED



LanzaTech

¹Köpke & Simpson (2020) *Curr Opin Biotechnol* 65:180; Fackler et al. (2021) *Ann Rev Chem Biomol Eng* 12: 439; Pavan (2021) *Methods Mol Biol* 2229:137

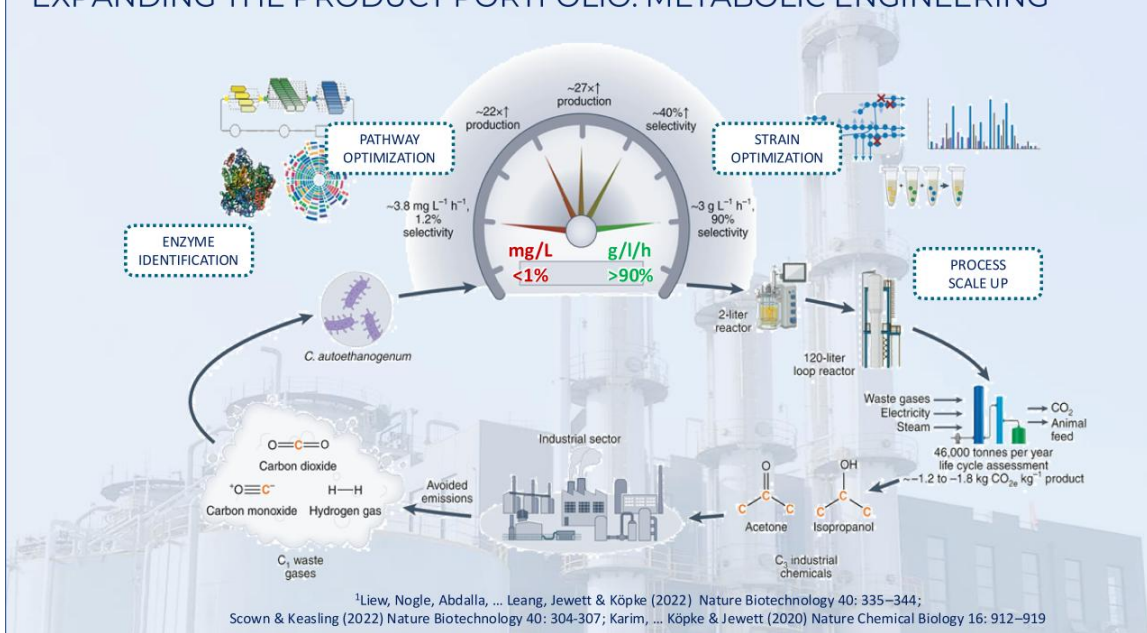
LANZATECH MODELS – POWERED BY MULTI-SCALE DATA



PRODUCT FLEXIBILITY THROUGH SYNTHETIC BIOLOGY

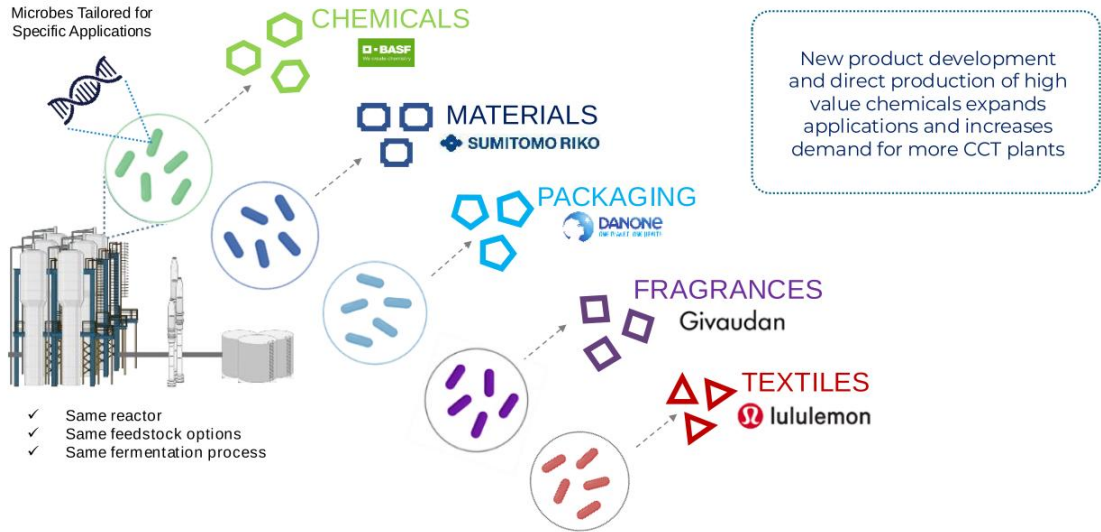


EXPANDING THE PRODUCT PORTFOLIO: METABOLIC ENGINEERING



SYNBIO AT SCALE

WE LEVERAGE SYNBIO TO EXPAND THE PORTFOLIO OF CHEMICAL BUILDING BLOCKS FOR CIRCULAR MATERIAL PRODUCTION



Carbon is in



the fuels we need

LanzaTech

We had a dream...

From Waste to Wing

The diagram shows a process flow starting with 'Ethanol' (represented by a water drop icon) which goes through four stages: Dehydration, Oligomerization, Hydrogenation, and Fractionation. The final product is 'ATJ-SPK Diesel', which is used to fuel an airplane. Above the flow, there are icons of waste and a plus sign, suggesting the process starts with waste. Text below the flow states: 'Flight will provide fuel performance data to help accelerate ASTM qualification of ATJ production pathway'. Logos for partners include ENERGY (Energy Efficiency & Renewable Energy), virgin atlantic, BOEING, HSBC, and Pacific High Density Polyethylene.

Accelerating a Path to the Circular Economy

The diagram illustrates a circular economy for aircraft. It features a central vertical axis with 'CCU' (Carbon Capture and Utilization) at the top and 'Make' at the bottom. A 'Recycle' arrow loops back from the 'Make' stage. To the right, under 'Everything else...', are icons for 'Polyurethane seating foams', 'Exterior paints and coatings', 'Synthetic rubbers', 'Structural and interior adhesives', and 'Interior plastic mouldings'. A 'Light Strong Steel for Planes....' label is positioned near the 'Make' stage. The LanzaTech logo is at the bottom right.

...that steel mill emissions could fuel a plane

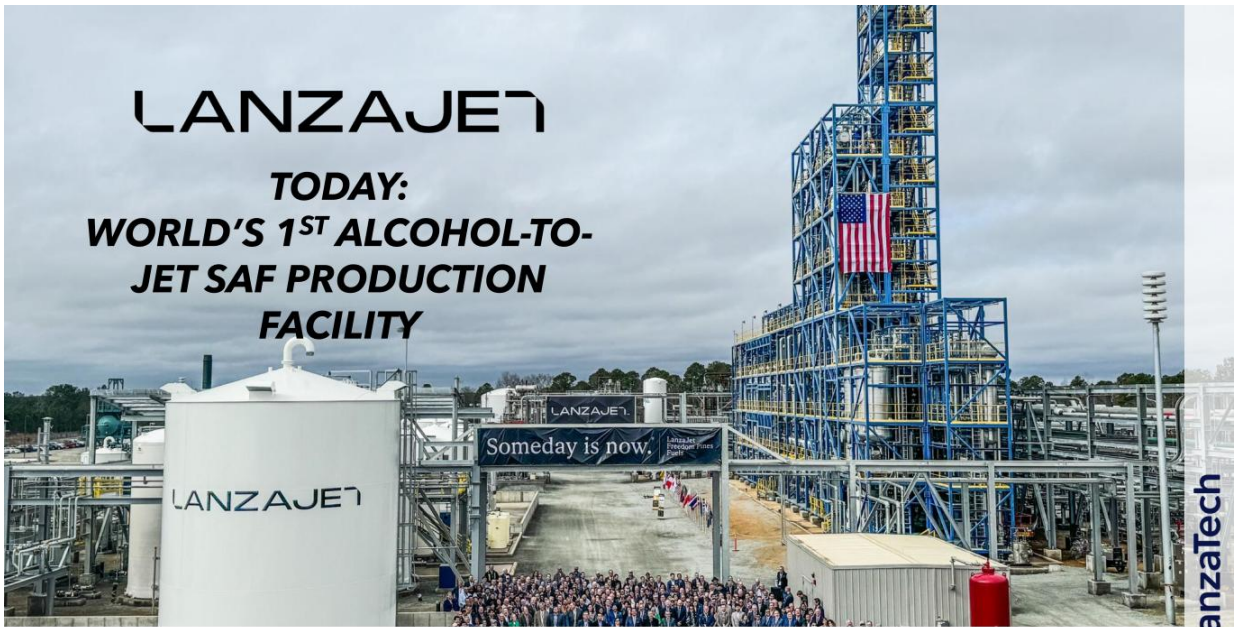
2018



LanzaTech

LANZAJET

**TODAY:
WORLD'S 1ST ALCOHOL-TO-
JET SAF PRODUCTION
FACILITY**



LanzaJet Formed
in 2020



ATJ PROCESS UNLOCKS DIVERSE FEEDSTOCKS

A MASSIVE OPPORTUNITY

SAF PRODUCTION BY TECHNOLOGY PATHWAY (2022-2050)

MILLIONS OF TONNES

- POWER-TO-LIQUID & DIRECT AIR CAPTURE
- GASIFICATION
- ATJ
- HEFA



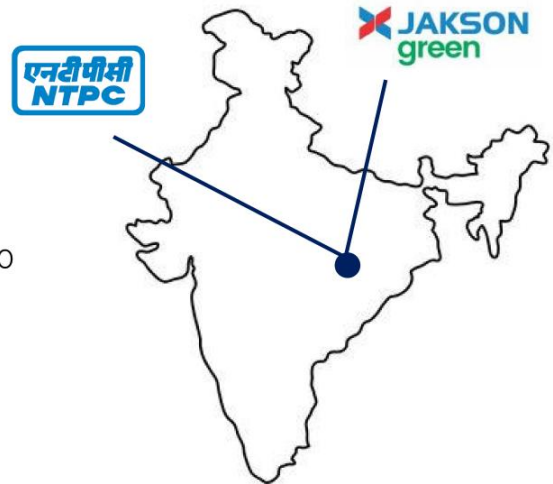
Source: LEK report Fueling the future of aviation (2023) with sources from Bergero et al. (2023), IATA, ATAG (2020), WEF (2021).

LanzaTech + LANZAJET

4G ETHANOL IN INDIA FROM CO₂ AND GREEN H₂

Strong partnership with Jakson Green + NTPC to create ethanol from CO₂ + H₂

- Collaboration with Jakson Green and NTPC, India's largest power generation utility company
- Utilize CO₂ from power generation
- Annual CO₂ abatement capacity of 7,300 tonnes
- Strong alignment with India's energy transition initiatives



FROM WASTE TO WING



FEEDSTOCKS OF THE FUTURE ARE WASTE BASED
ENABLING LOCAL DISTRIBUTED SYSTEMS OF PRODUCTION

UK SAF Mandate
limits the percentage
of SAF that can be
made from cooking
and waste oils (HEFA)
over time. Food and
feed restrictions in
place and PtL sub
target

EU ReFuelEU
“First generation”
biofuels produced
from food and feed
crops are excluded
and sub mandate
for PtL fuels

*Hydrotreated Esters and Fatty Acids (HEFA), including vegetable and waste oils & fats
**Power to Liquid, synthetic liquid hydrocarbon fuels produced from renewable electricity, water and CO₂

A NATURAL EXTENSION

STEP 1

**REDUCE
CARBON
EMISSIONS**

STEP 2

**POWER THE
CIRCULAR
ECONOMY**

STEP 3

**REPAIR
OUR
FOOD SYSTEM**

WE'VE MADE FOOD SINCE 2018

PROTEIN CURRENTLY PRODUCED AS A CO-PRODUCT WITH ETHANOL AT SEVERAL COMMERCIAL SITES

Existing operating plants using LanzaTech's biorefining platform that produce ethanol as a primary product have produced **25,000 metric tons of protein co-product to date:**

- ✦ Several operating plants went through a lengthy process to have protein certified for animal feed
- ✦ These plants have since sold protein as an ingredient to aquaculture, poultry, and pig feed producers
- ✦ Operations in India are progressing with protein certification for poultry feed markets
- ✦ Contains all 20 amino acids and >85% protein



LanzaTech

45

LanzaTech Nutritional Protein 2.0

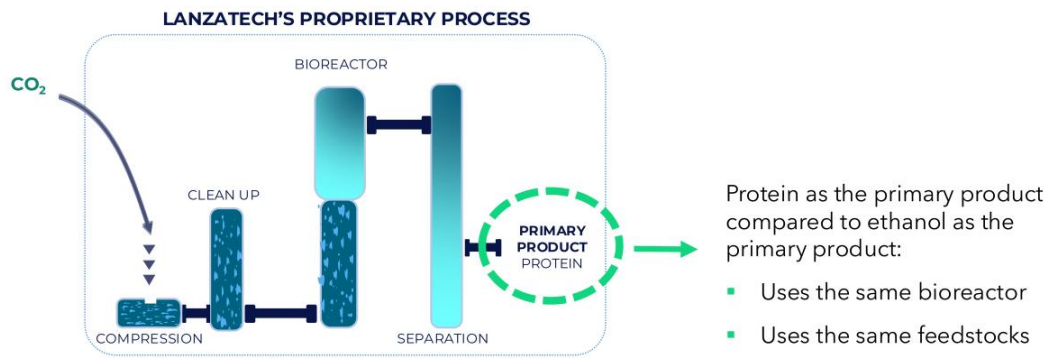
A NEW SUSTAINABLE SOURCE OF
PROTEIN FROM CO₂



Pictured: LanzaTech Nutritional Protein
Produced in pilot facility in Illinois

LNP PROCESS

Commercializing production of nutrient-rich protein as primary product through LanzaTech's proprietary gas fermentation process



By using a new microbe, LanzaTech's existing biorefining platform **can mass produce protein as the primary product** of its gas fermentation process, which drives incremental value from LanzaTech's core competencies

LNP PRODUCT PROPERTIES

- ✓ Comparable properties to pea and whey protein
- ✓ >85% protein content
- ✓ Contains all 20 amino acids
- ✓ No allergenicity
- ✓ Highly digestible
- ✓ Odorless and neutral color

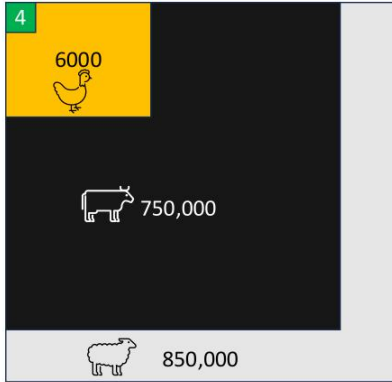
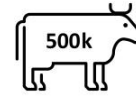
0.5 metric tons per day of LNP is roughly the equivalent of giving a typical complete daily intake of protein to approximately 9,000 people



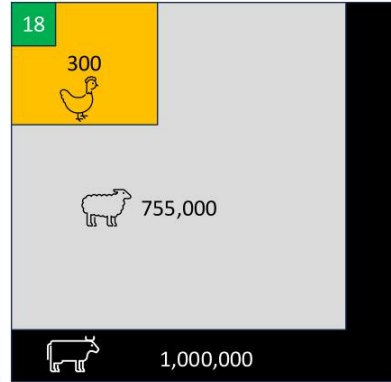


45k MTA protein facility
Using NG steam source + CO₂ + blue/grey H₂

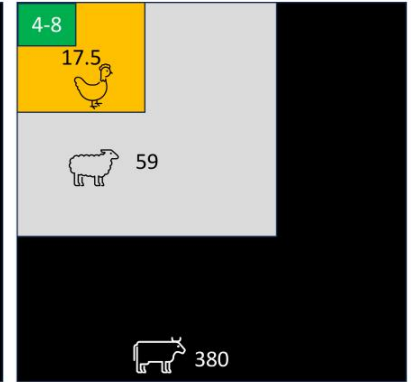
Makes the equivalent protein of...



Acres of Land



Swimming Pools of Water

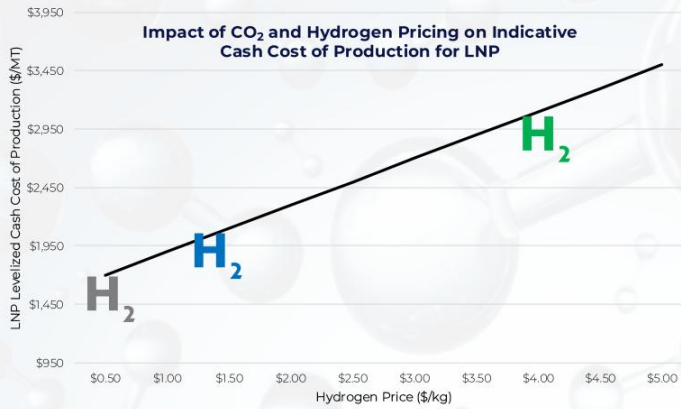


CO₂ per kg/protein

Protein production can **flexibly shift to utilize green hydrogen** as it becomes cheaper and more abundantly available. H₂ is main sensitivity driver on cost

IMPACT OF CO₂ AND H₂ PRICING ON INDICATIVE CASH COST OF PRODUCTION

Assumes co-location with US corn ethanol facility and captured CO₂



Cost of hydrogen is main sensitivity driver for LNP Cash Cost of Production

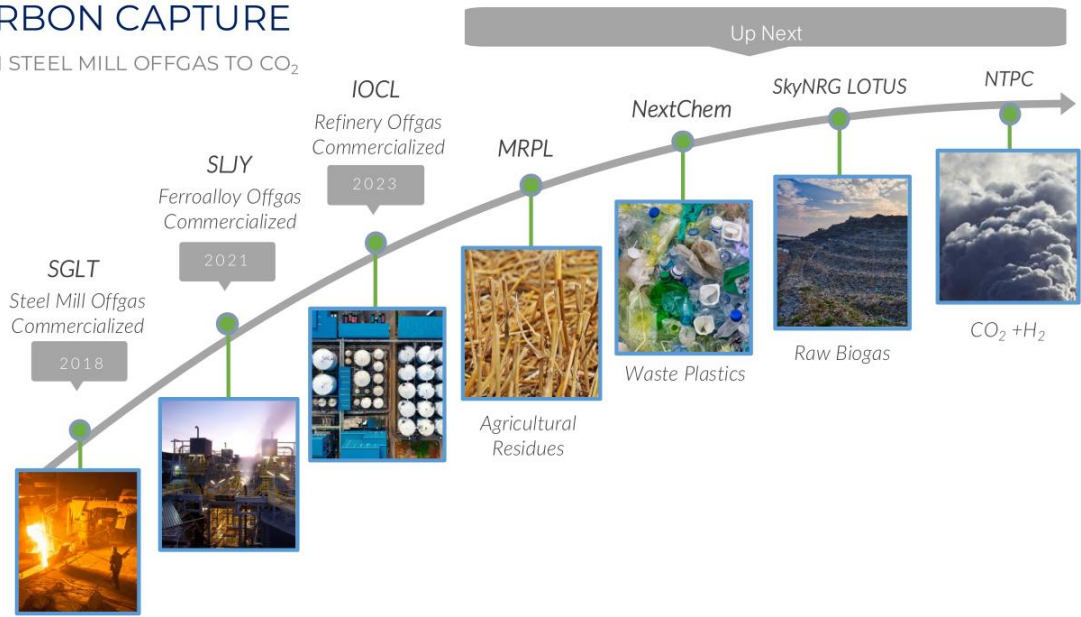
Expected to have attractive project economics across the hydrogen rainbow, with significant upside in the grey and blue hydrogen price zones

LNP production is expected to **flexibly shift to utilize green hydrogen** as it becomes cheaper and more abundantly available

*LNP is a sustainable protein product that is expected to be blended into food formulations **without adding cost***

JOURNEY TO COMPLETE CARBON CAPTURE

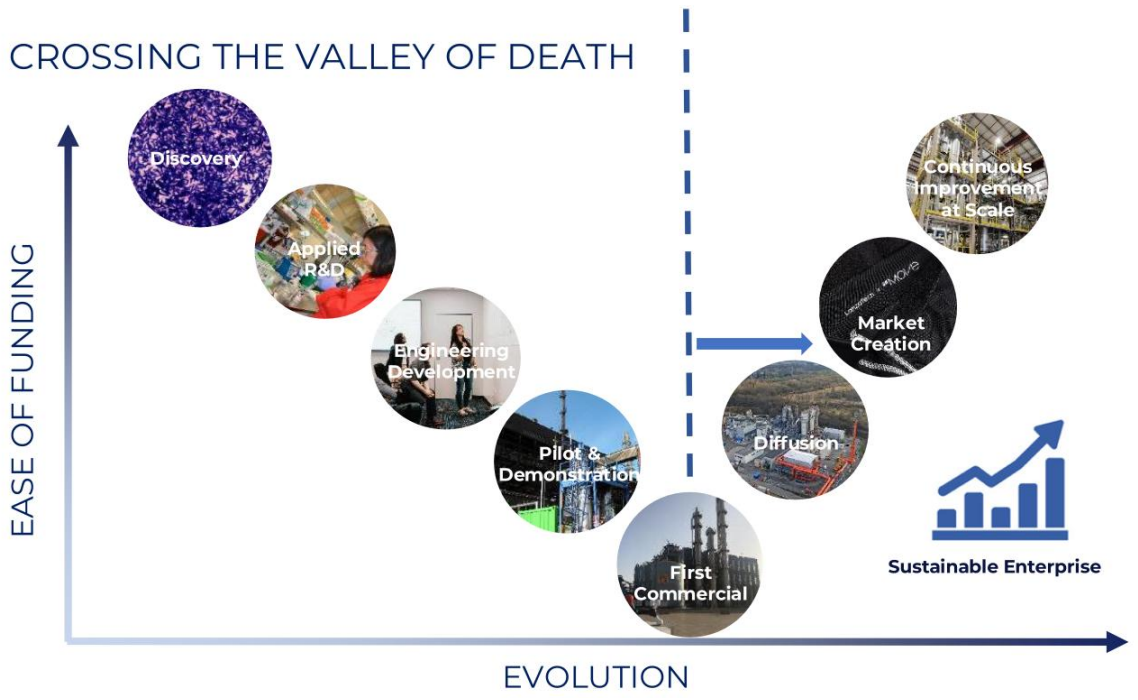
FROM STEEL MILL OFFGAS TO CO₂



THE NEW CARBON ECONOMY IS DISTRIBUTED AND CIRCULAR



CROSSING THE VALLEY OF DEATH



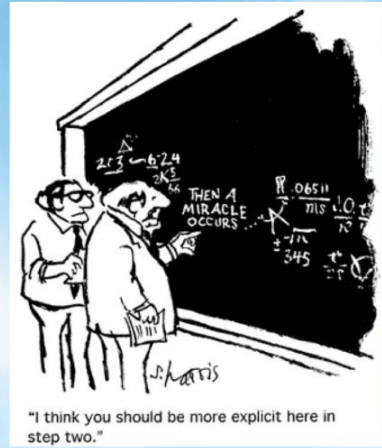
IMPACT OF POLICIES

We must adopt technology neutral positions and support all solutions.

We must fail quickly and move on.

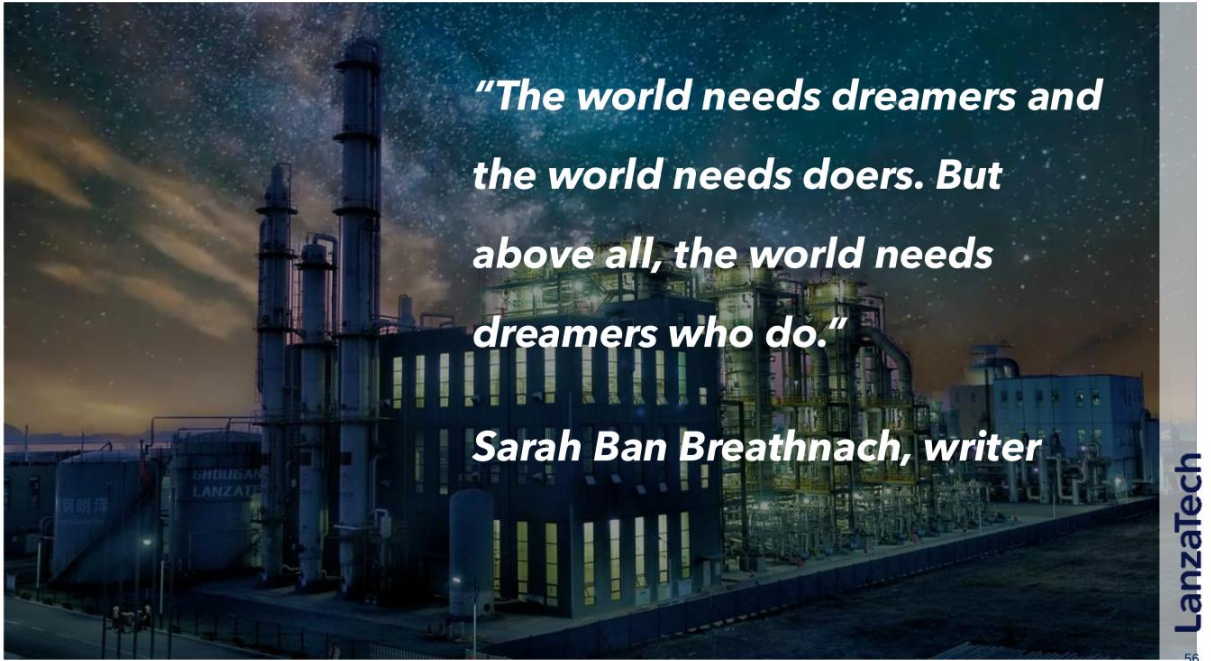
We must collaborate to address environmental concerns and get new fuels and chemicals to market quickly.

We need funding for every scale of commercialization from proof of concept through to first commercial units.



***Need to Ensure all Solutions can Contribute Quickly
Policies, Definitions and Funding Drive or Block
the Build Out of Disruptive Technologies***





***“The world needs dreamers and
the world needs doers. But
above all, the world needs
dreamers who do.”***

Sarah Ban Breathnach, writer

LanzaTech

Nasdaq: LNZA

RECYCLE CARBON WITH BIOLOGY
