Superior Fuels & Chemicals

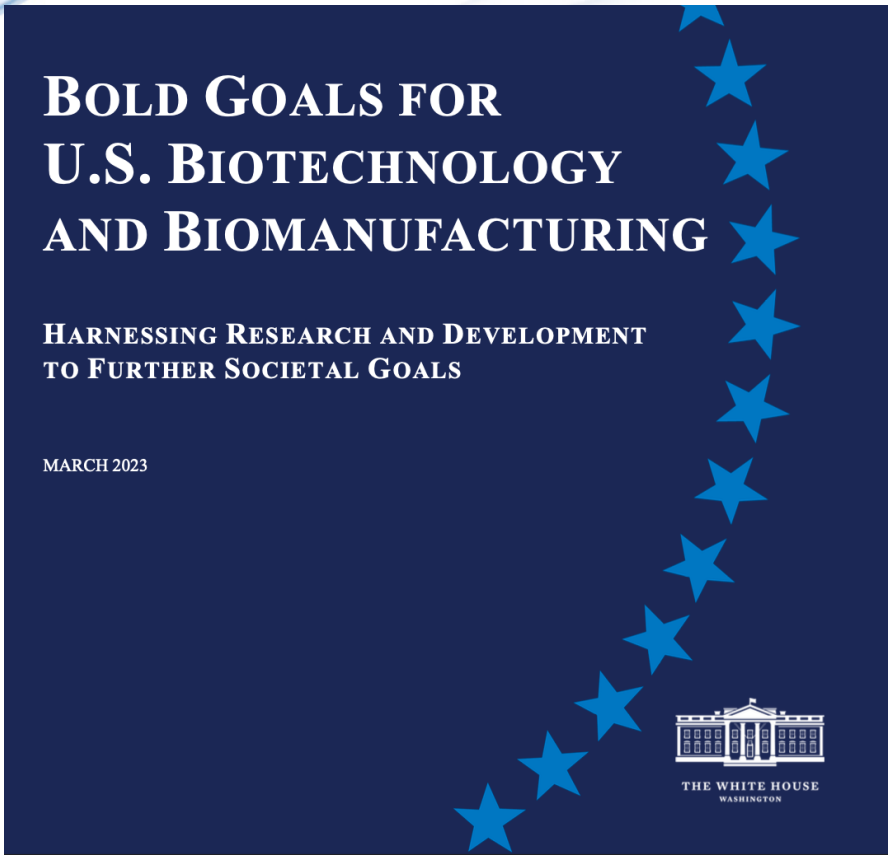
VIA's synthetic drop-in fuels and chemicals are like-for-like replacements for over 100 billion gallons of today's fossil sourced compounds in the U.S. alone.

Lewis J. Dutel
CEO & Cofounder

V2R17

Targeted Solutions & Bold Goals

Inflation Reduction Act



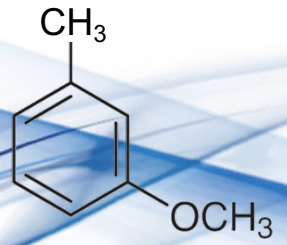
- **Aviation Fuel**
  Sustainable Aviation Fuels
- **Transportation Fuel**
  Hard to electrify
- **Chemicals**
  Replacement of fossil feedstocks
- **Alternative Feedstocks**
  Waste based volume limits
  Cellulosic sugar feedstocks

Our Product Suite

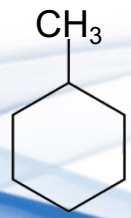
VIA 1 3-Methylanisole (3-MA)

VIA 2 Methylcyclohexane (MCH)

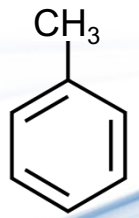
VIA 3 Toluene



VIA 1
(3-MA)



VIA 2
(MCH)



VIA 3
(Toluene)

VIA Process Overview

3-MA Fermentation
S. cerevisiae

MCH
3-MA + H_2

Toluene
MCH - H_2

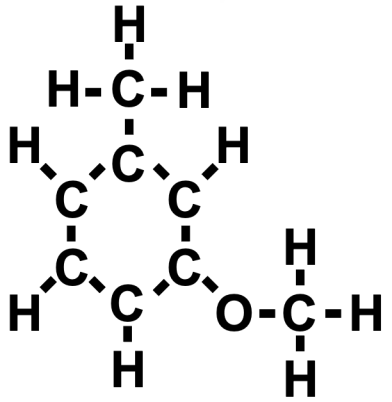
S. cerevisiae: 3-MA vs Ethanol

- **(8) Carbons vs (2) Carbons**
  ”Skipping Steps”
  3-Methylanisole: $C_8H_{10}O$
  Ethanol: C_2H_6O

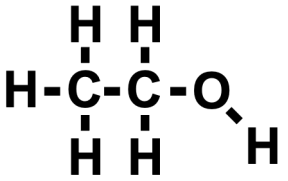
- **156% Energy Density**
  3-Methylanisole: 33.19 MJ/L
  Ethanol: 21.30 MJ/L

- **3-MA’s 7-Carbon Derivatives**
  Methylcyclohexane: $CH_3C_6H_{11}$
  Toluene: C_7H_8

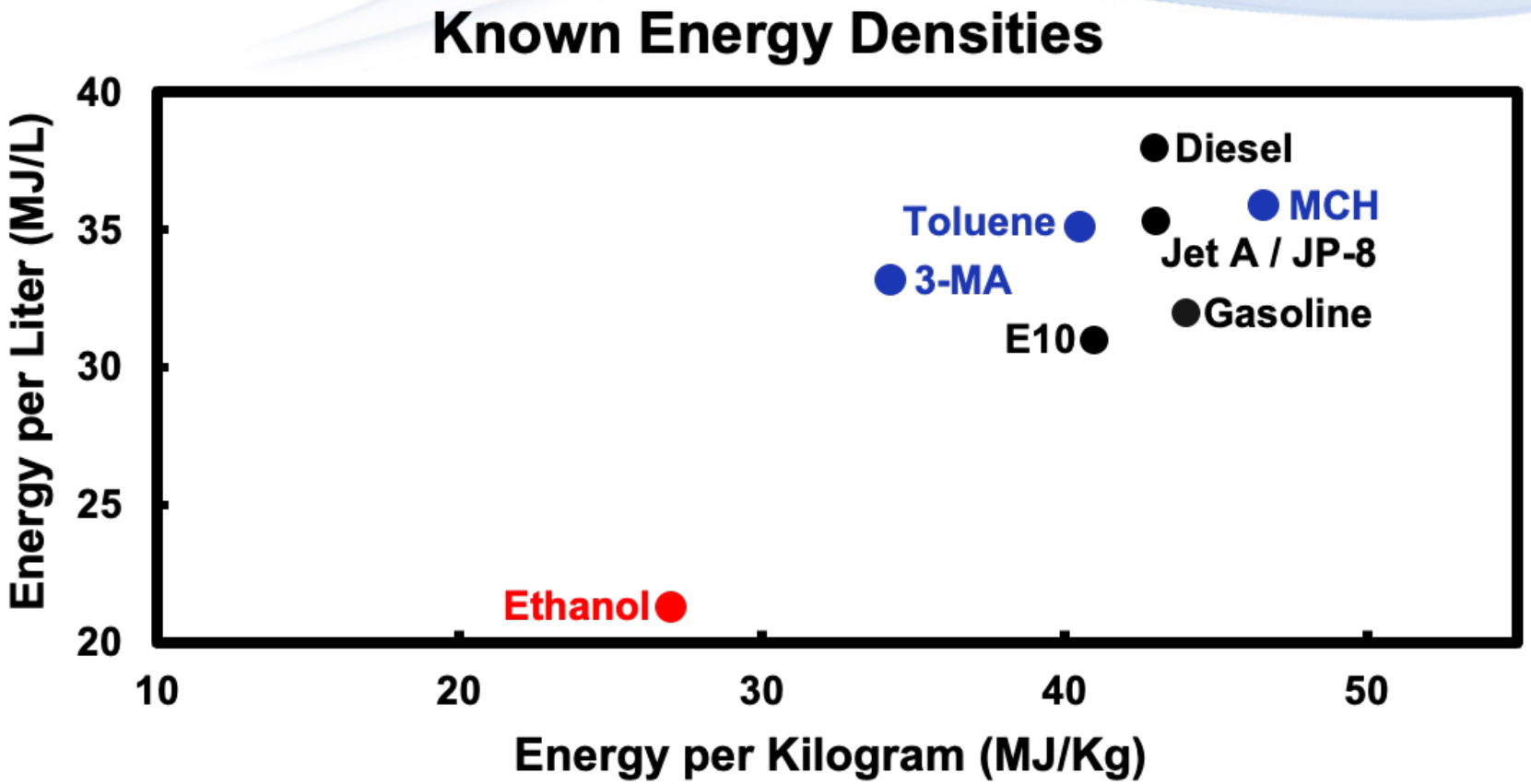
3-MA



Ethanol



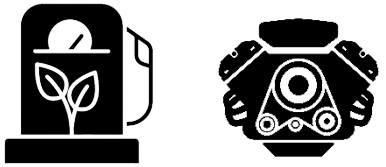
Key Differentiators



Drop-In Fossil Replacements - Today

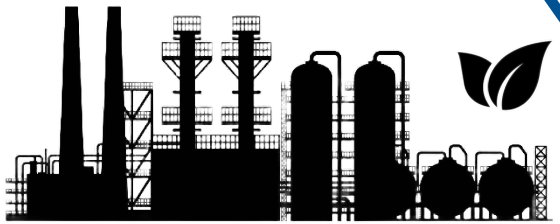
Aviation Fuel

Transportation Fuel

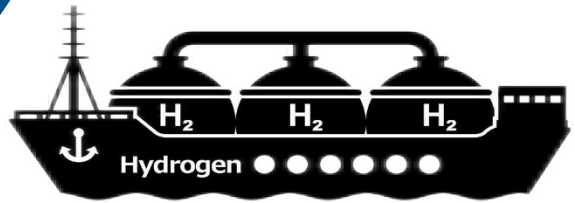


VIA 1 (3-MA)
VIA 2 (MCH)
VIA 3 (Toluene)

Chemicals



Hydrogen Transport



Jet Fuel & Sustainable Aviation Fuel (SAF)

- **VIA 2 - MCH**

  MCH is a cycloalkane
  MCH is used in jet fuels today
  MCH blends up to 10%

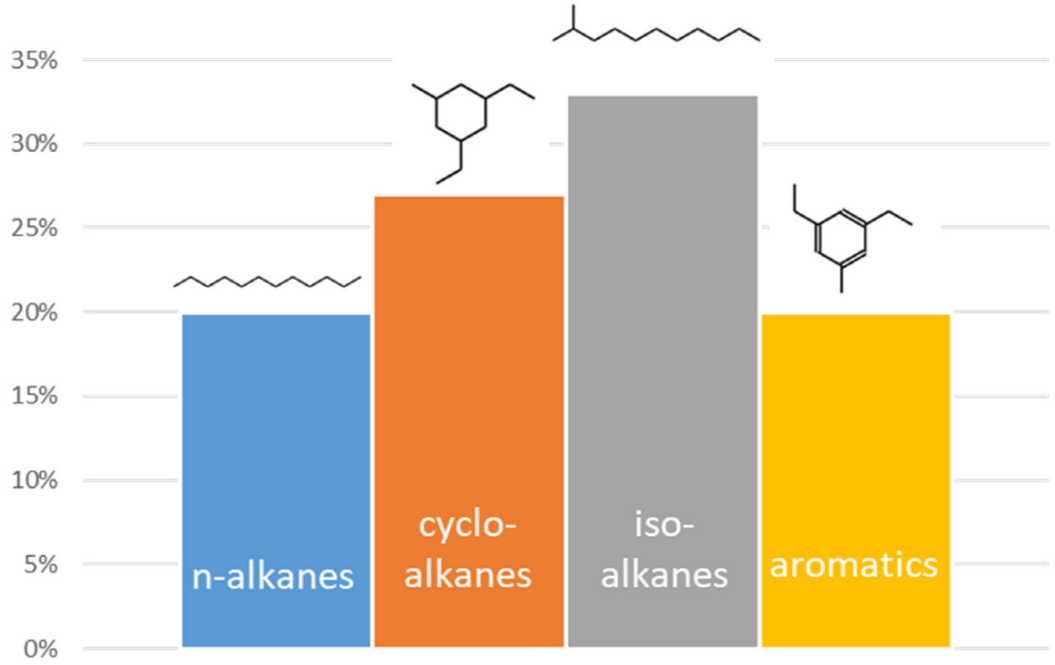
- **SAF Goal**

  3 billion gallons by 2030
  35 billion gallons by 2050

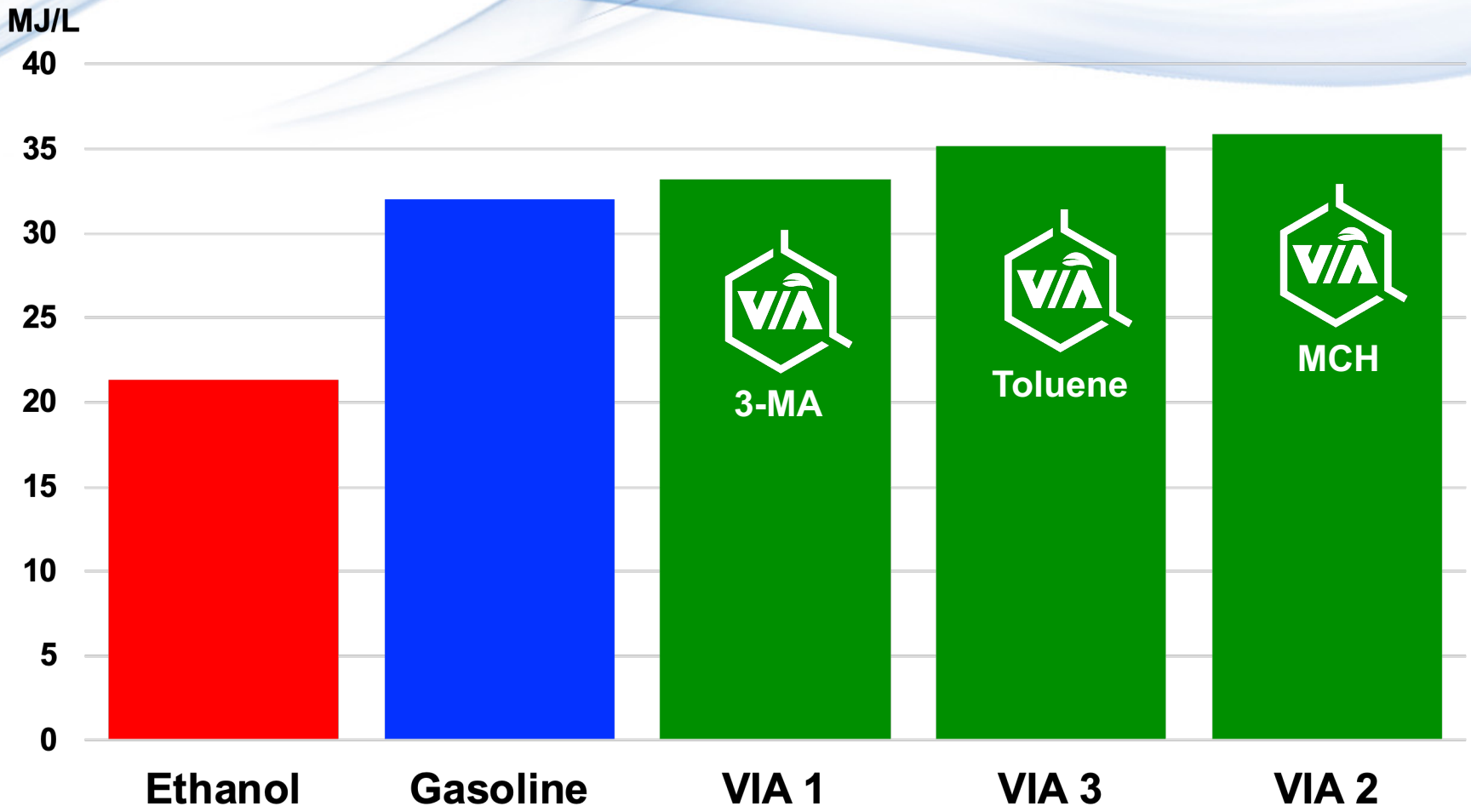
- **US Aviation Fuel**

  13.78 billion gallons in 2021

Chemical composition of aviation fuel - Jet A-1

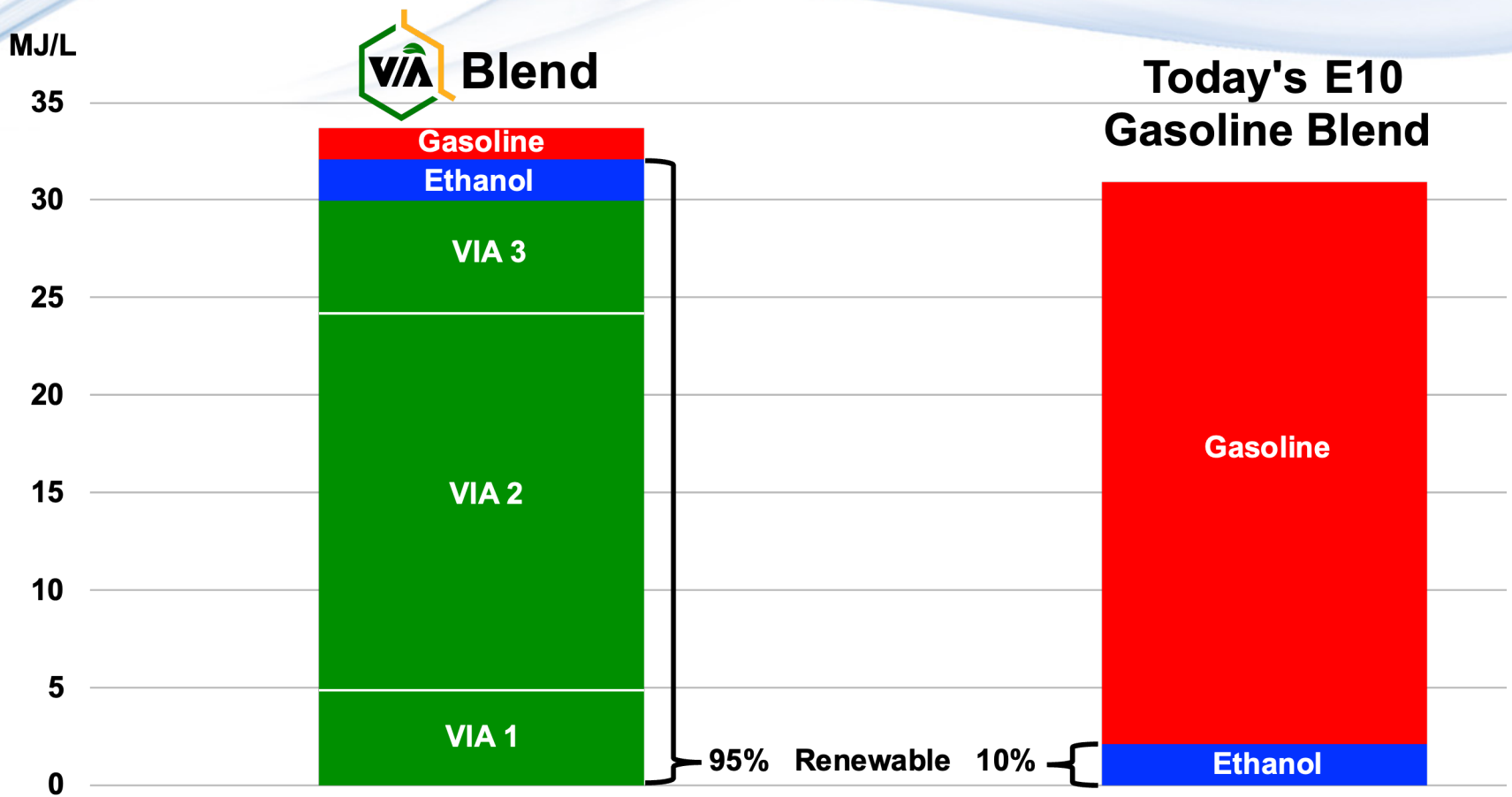


VIA's Drop-In Fuels Have High Energy Density

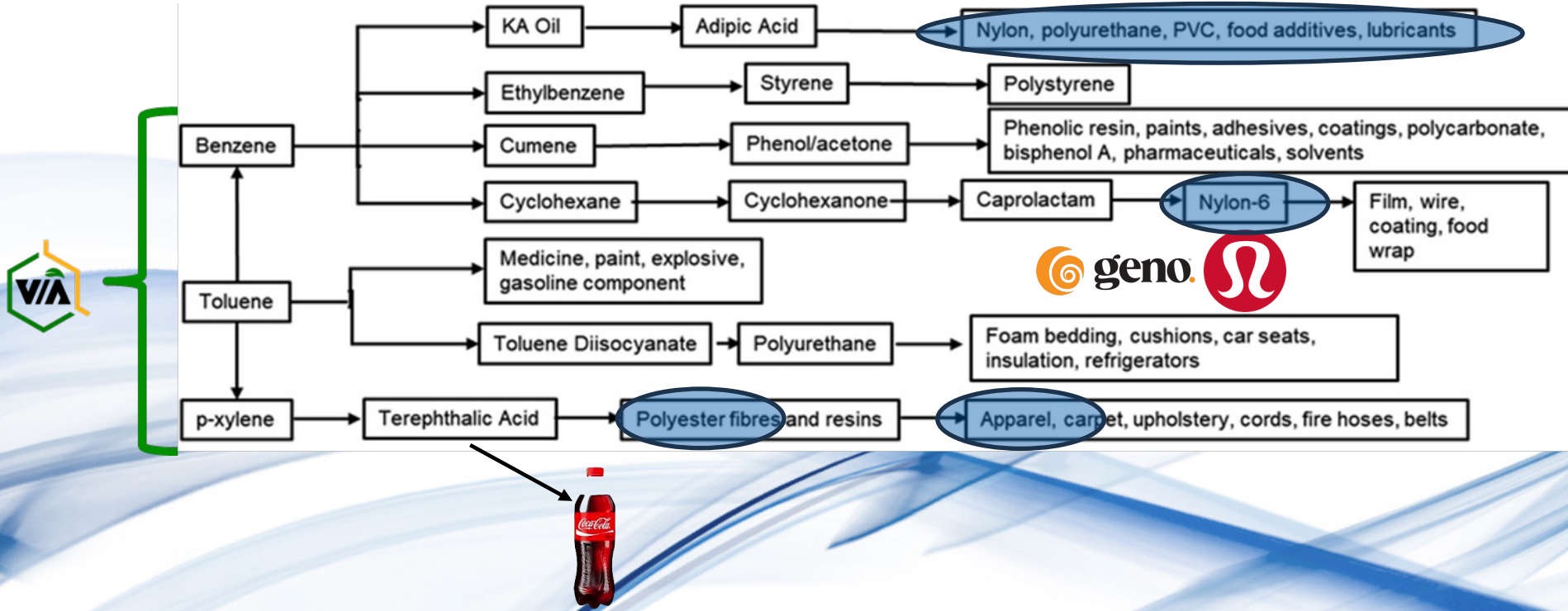


95% Renewable Premium Blend

O&G Super Major Top Fuel Scientist



VIA 3 Bio-feedstock to transform fossil-based BTX…



…and all the familiar products produced from BTX

US Drop-in Market Overview

- **US Aviation Fuel 10% – MCH**
  1.7 Billion Gallons*
- **US Gasoline Fuel 85% - 3-MA, Toluene & MCH**
  115 Billion Gallons
- **US Toluene Chemicals 100% - Toluene**
  1.3 Billion Gallons

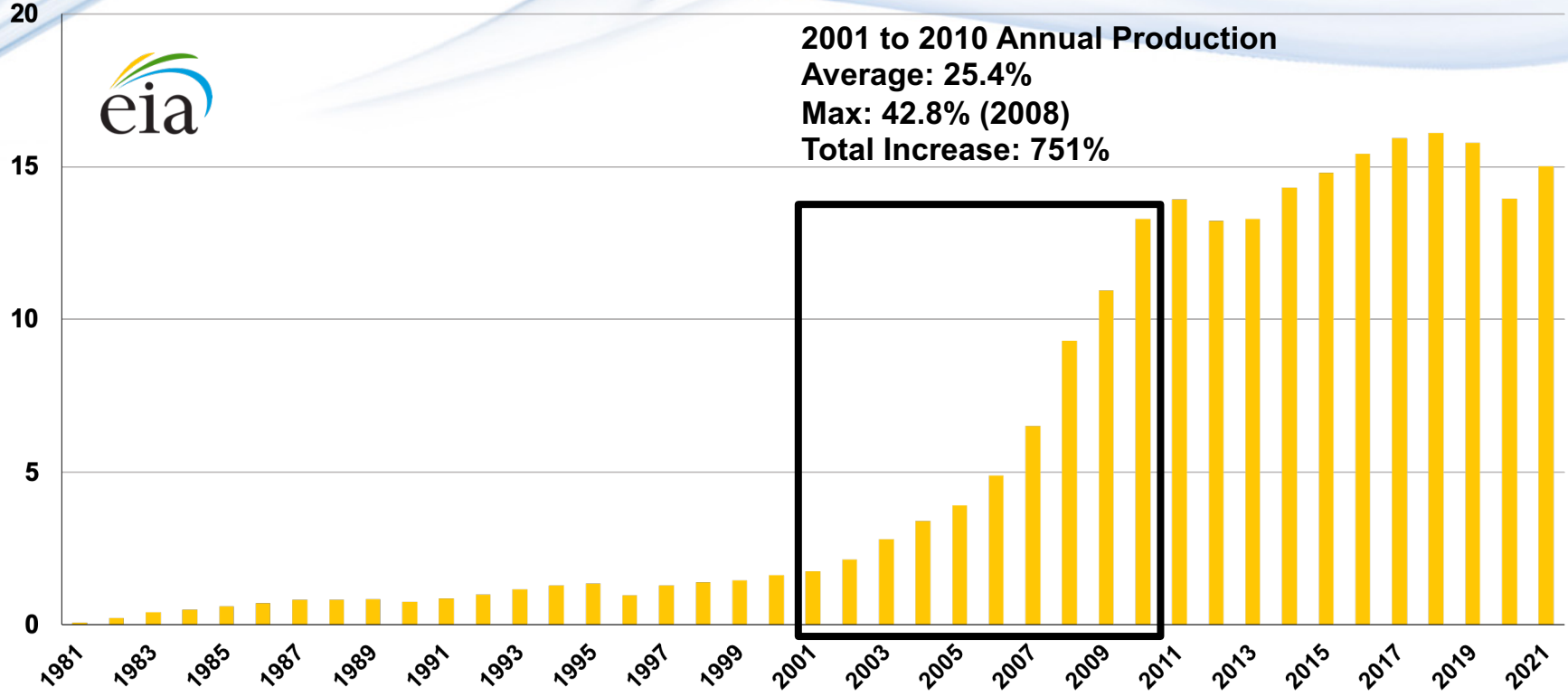
* Global Aviation MCH Drop-in 8 Billion Gallons

Process & Technology

Feedstocks Renewable Carbon Sources	Fermentation Continuous Fermentation At Scale	Capture Continuous 3-MA Production	Catalysis Onsite MCH & Toluene Production
Corn Sugarcane Rice Cellulosic	MFG Technologies Cauldron Pow.Bio	Off-the-shelf Process Technologies	Iowa State University Electrochemical
Plant feedstock global production is in a growth phase. VIA's yeast strains work with plant feedstocks currently in use today for ethanol production at scale.	5X Production with 30-80% CAPEX and OPEX reductions with continuous technologies. *Cauldron @10,000L Scale* (1) 8-month fermentation (20) 3-month campaigns	Volatilization eliminates toxicity and enables technologies such as continuous fermentation and electrochemical catalysis. Continuous capture enables modular scaling and greater processing efficiencies.	ISU electrochemical processes and catalysts scale modularly. The ISU process has enabled common elements such as bismuth & tin as the catalytic elements in place of palladium & platinum.

U.S. Fuel Ethanol Production 1981-2021

Billion Gallons



Ethanol scaled 750% to meet 10% gasoline demand of >13b gallons

3-MA Scaling Advantages

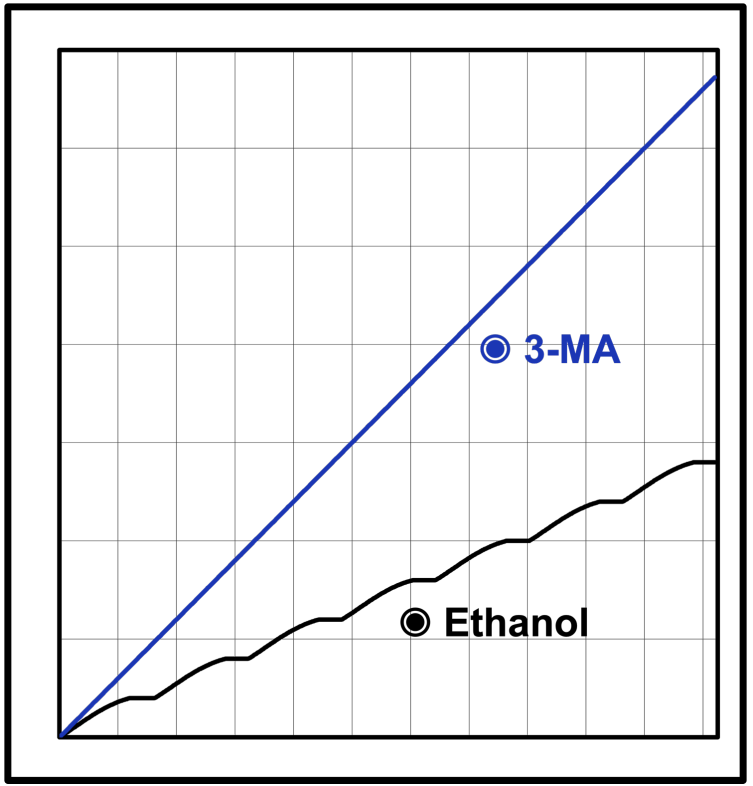
3-MA Volatilization

- 3-MA volatilizes during fermentation
- Volatilization enables continuous fermentation

3-MA Continuous Fermentation

- Continuous fermentation technology increases production 5X compared to typical batch production.
- OPEX & CAPEX reductions range from 30-80% compared to batch operations.

28 Day Fermentation Comparison



The VIA Team

Lewis J. Dutel
CEO

University of Louisiana
Lafayette

BS Mechanical
Engineering

Philip J. Barr, PhD.
CSO

University of California
San Francisco

PhD Organic Chemistry

Charles K. Marlowe, PhD.
EVP Chemistry

University of California
Berkeley

PhD Organic Chemistry

Brent J. Konstanzer
CFO

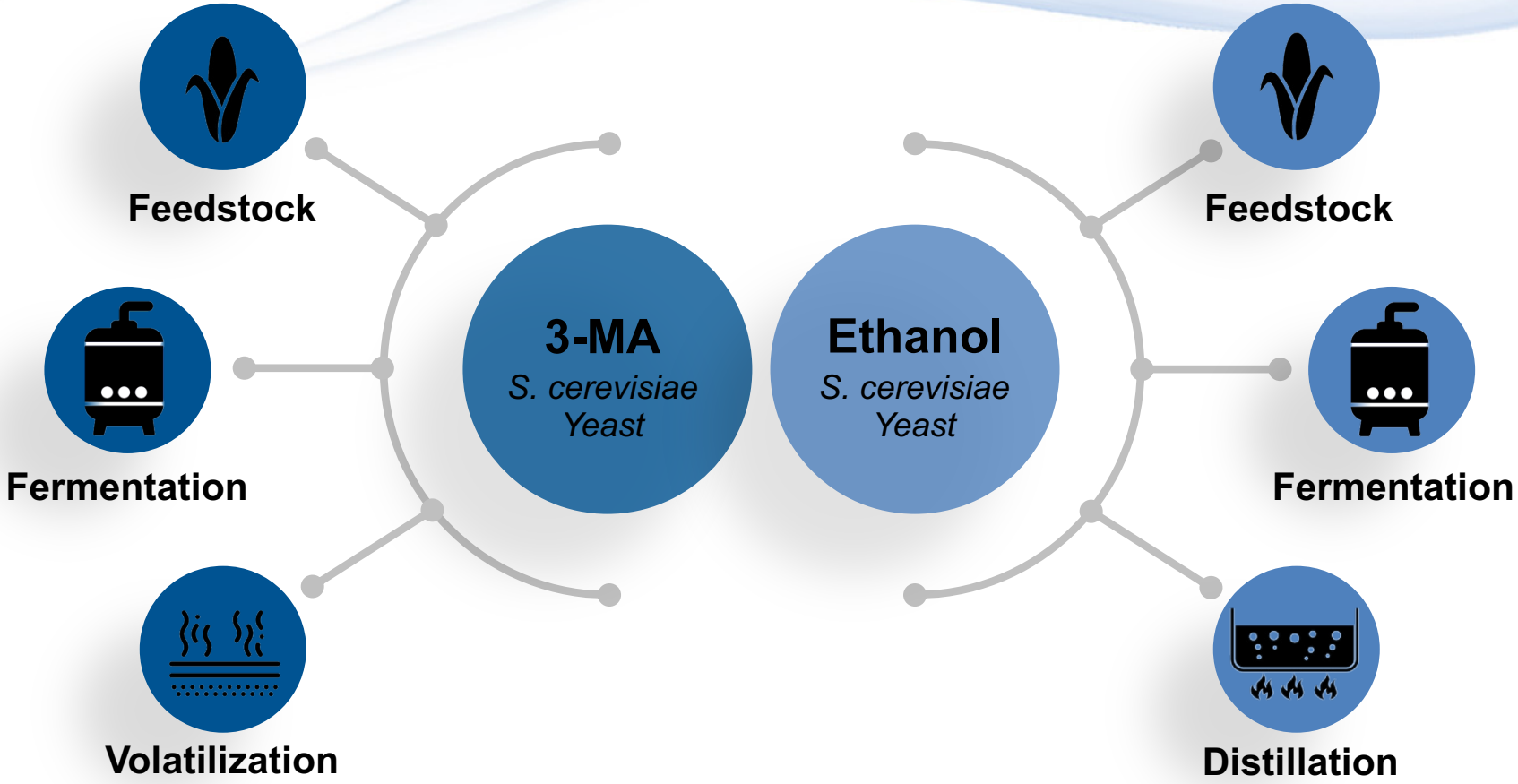
LSU
BS Civil Engineering

Rice University
MBA

Thank You

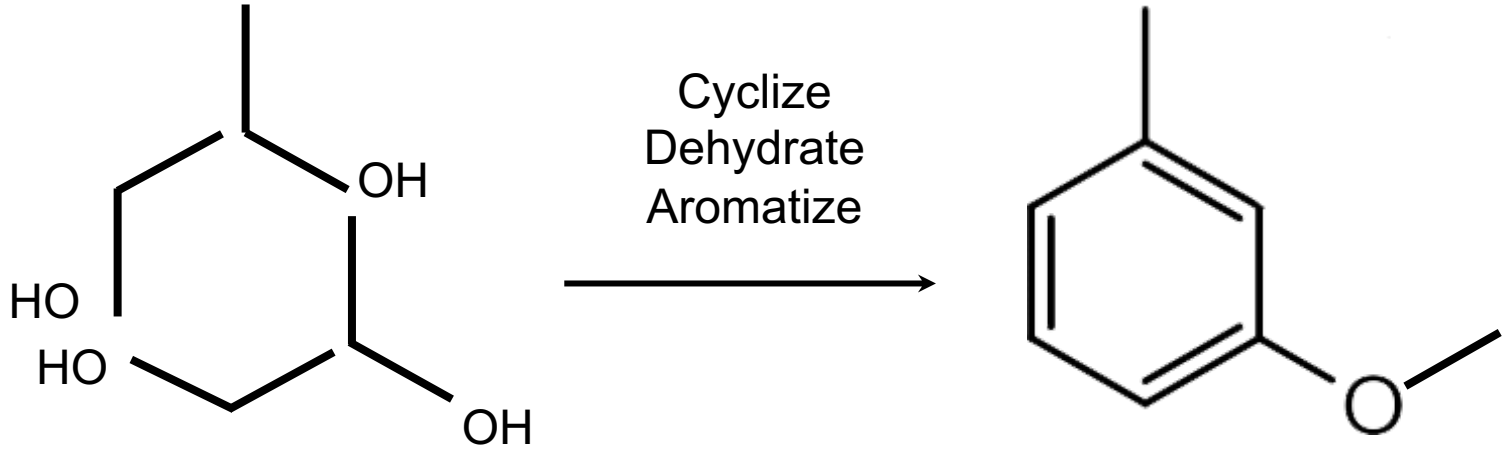
FAQ Slides

3-MA vs Ethanol



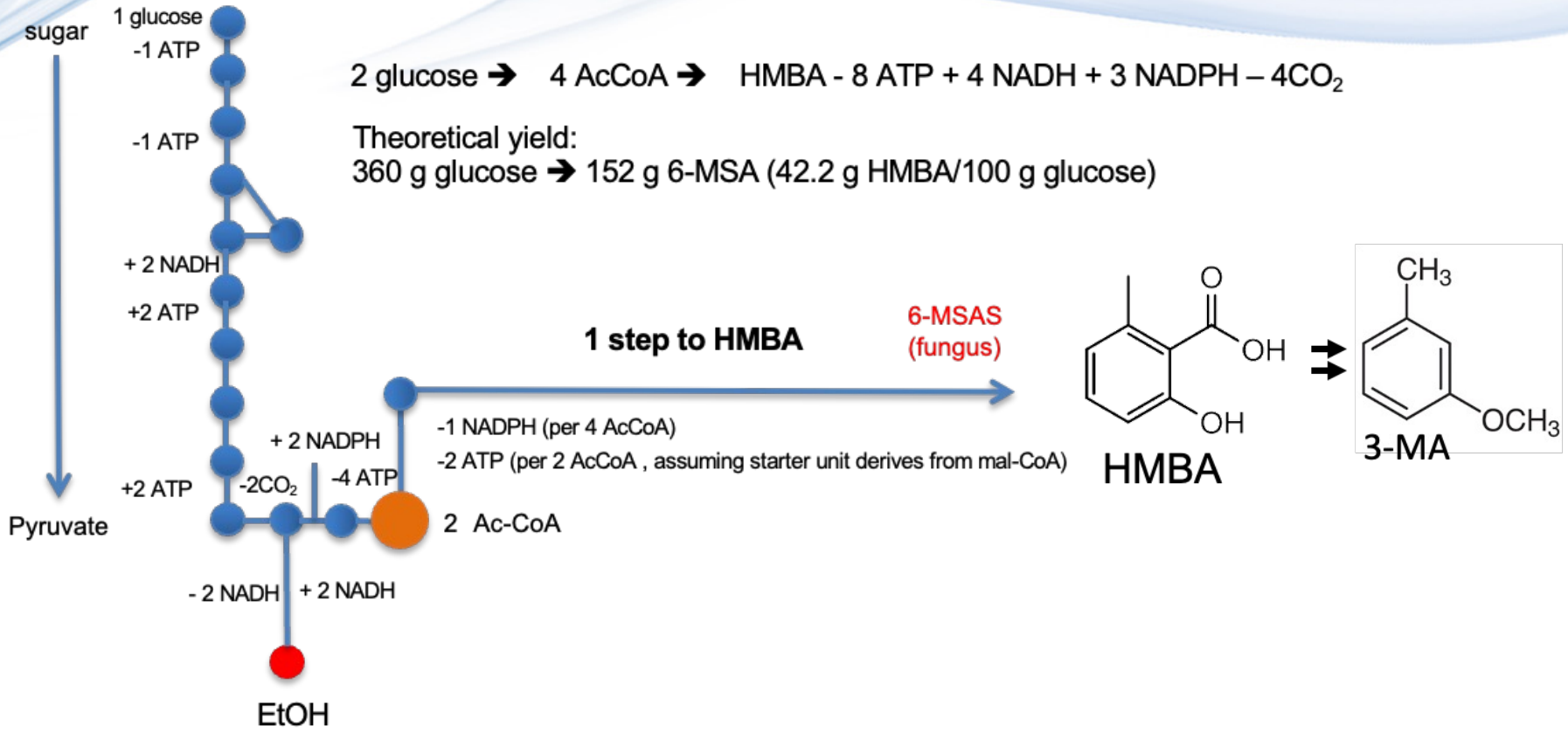
3-MA Technical

Bio-based 3-methylanisole is effectively four molecules of ethanol that are enzymatically cyclized, aromatized and has three oxygen atoms removed:

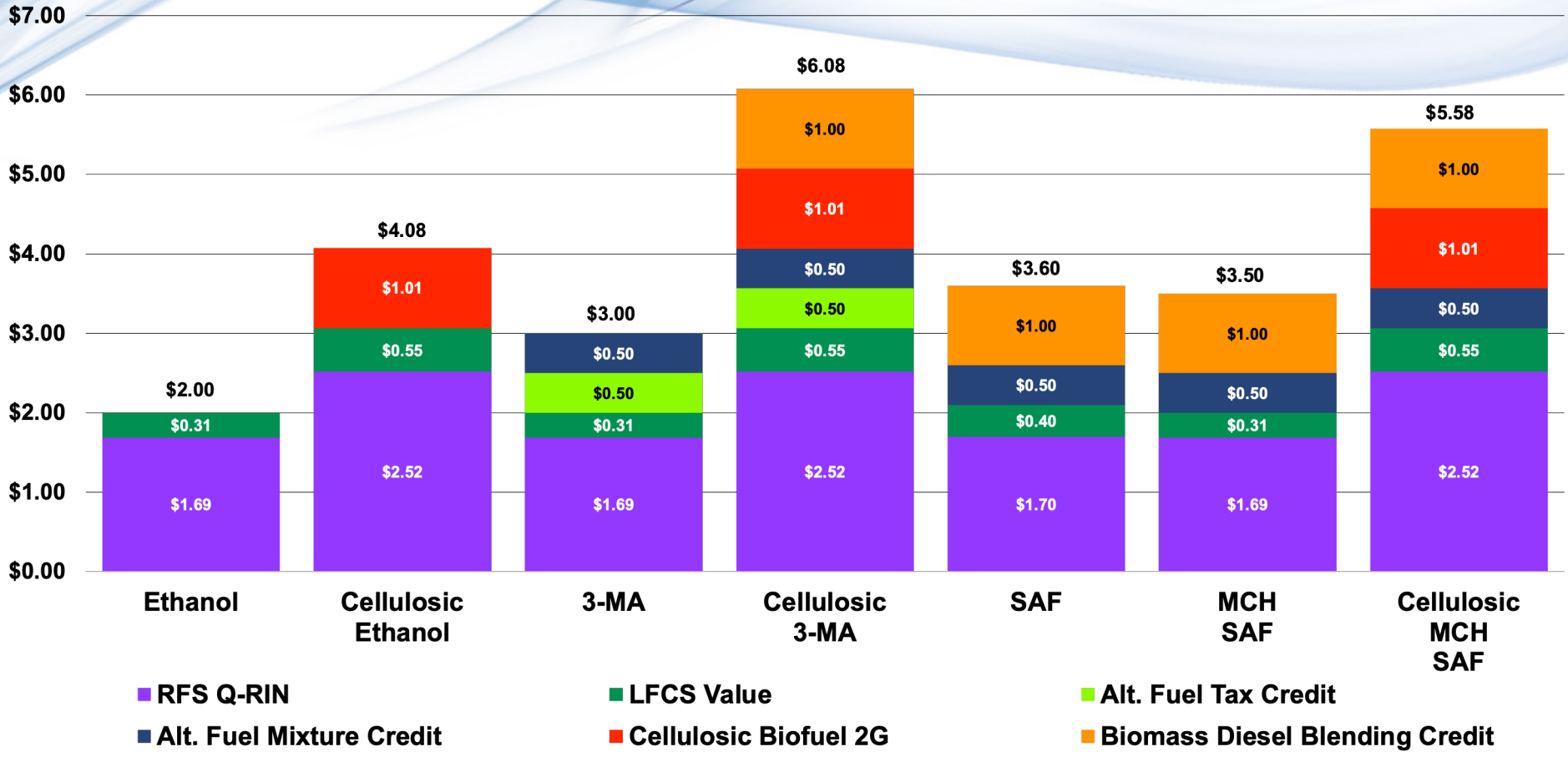


These chemical transformations lead to a molecule with much higher energy density than ethanol and, by virtue of removing hydroxyl groups, confer extreme hydrophobicity on the molecule – no attraction of moisture

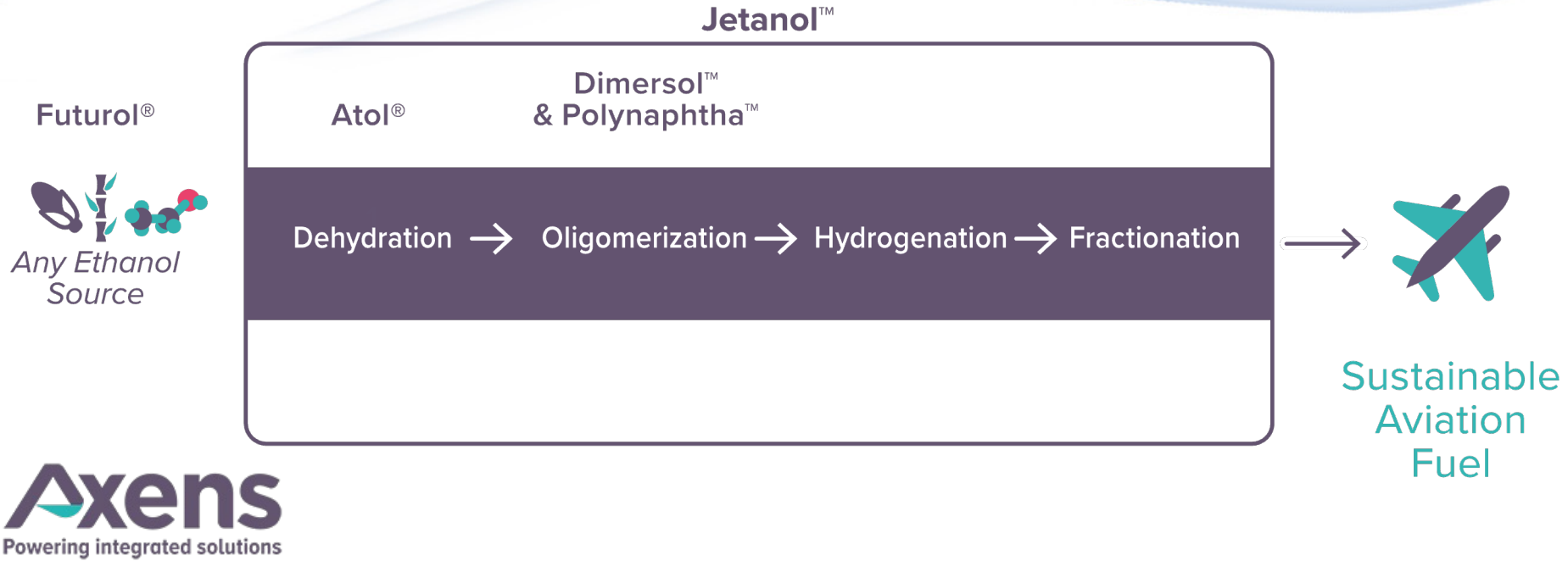
Yeast Engineering



Per Gallon Incentives (Fuels)

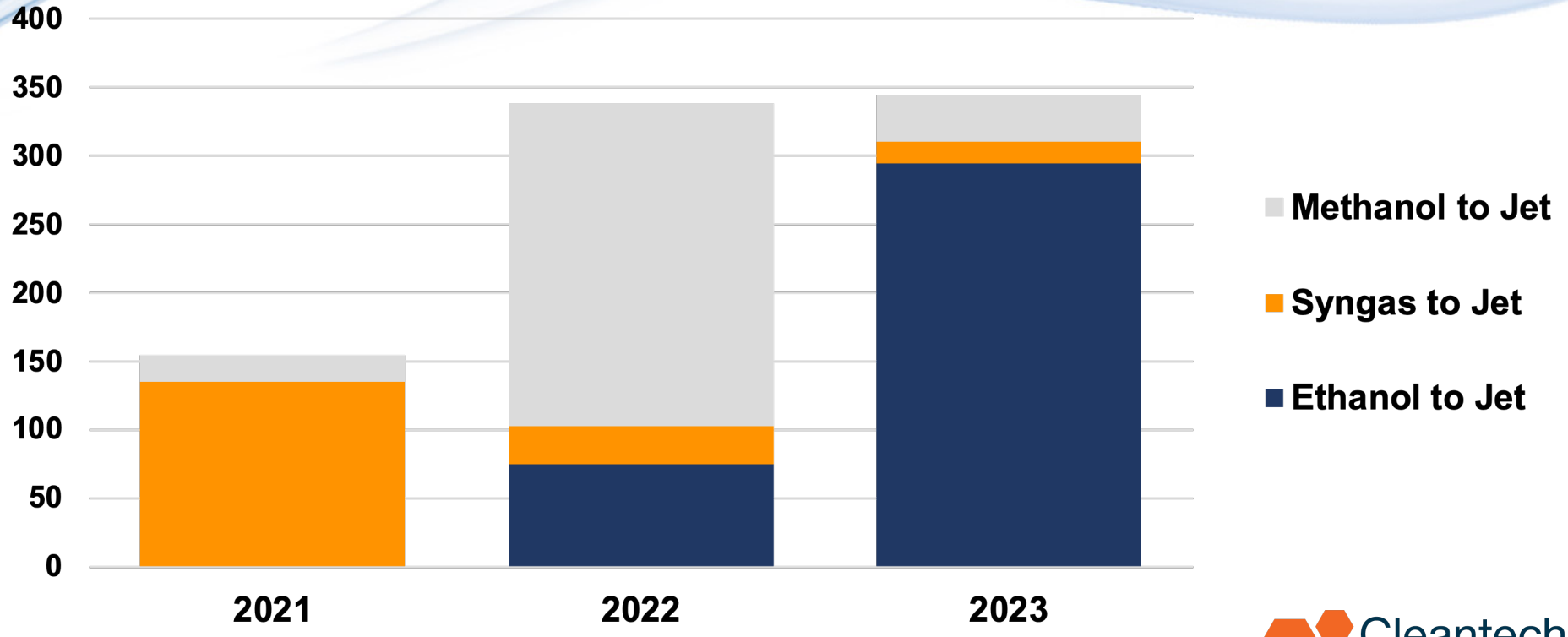


Ethanol to Jet is a Process



Gevo and Axens Ink Alliance for Ethanol-to-Jet Technology and Sustainable Aviation Fuel Commercial Project Development
October 2021

Venture Investments in E-fuels for Jet Fuel
(2021 - 2023)



S. cerevisiae yeast scales where other technologies have not!

Cleantech Group