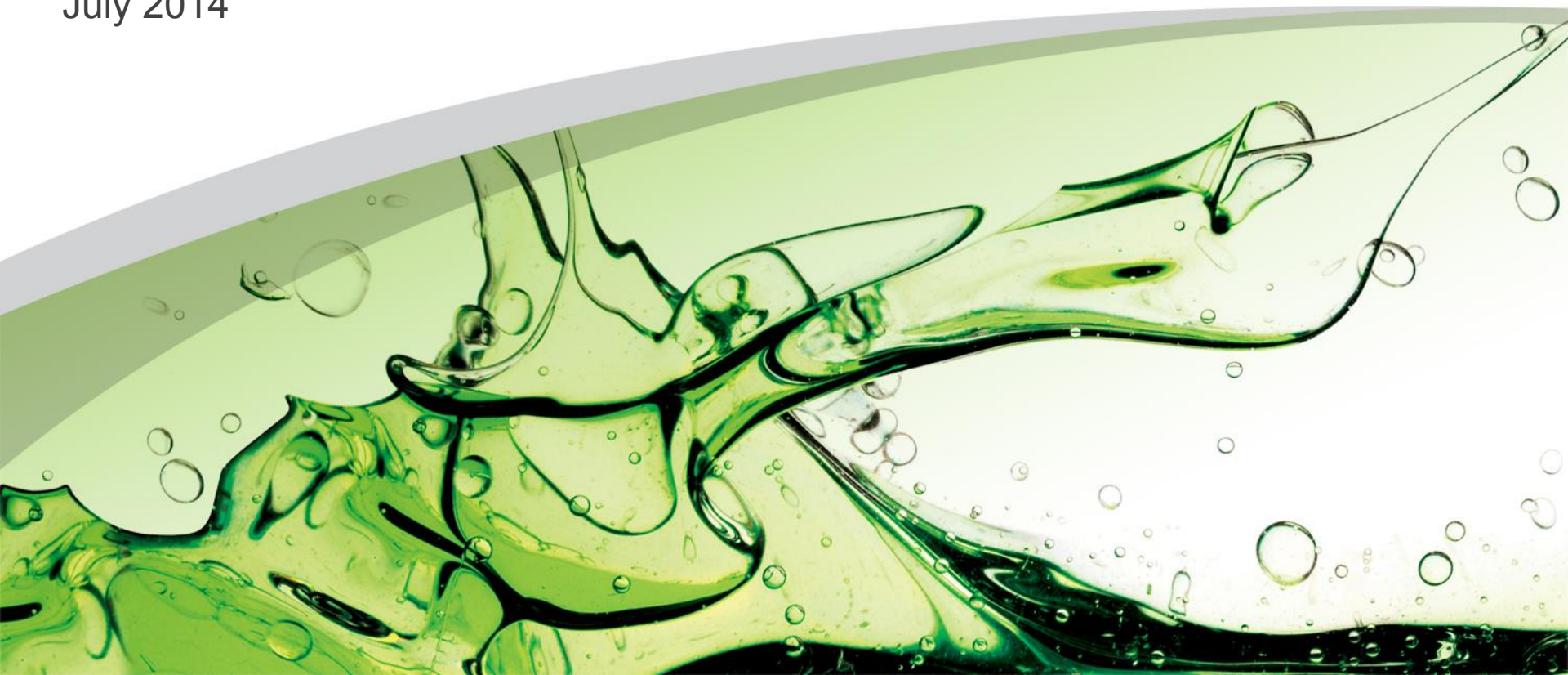
AMYRIS

U.S. DEPARTMENT OF ENERGY BIOMASS 2014

Growing the Future Bioeconomy

JOEL VELASCO

July 2014



Cautionary Note re: Forward Looking Statements

This presentation and oral statements accompanying this presentation contain forward-looking statements, and any statements other than statements of historical facts could be deemed to be forward-looking statements. These forward-looking statements include, among other things, sizes of markets that may be addressed by Amyris's current and potential products, Amyris's expected product pipeline, sales volumes and average selling prices, production volumes and costs and associated product launch timing expectations, operation of production facilities, commercial relationships, and Amyris's projected financial results, including revenues, operating expenses and earnings that involve risks and uncertainties. These statements and other forward-looking statements that may be provided in the presentation and/or oral statements accompanying it are based on management's estimates and current expectations and actual results and future events may differ materially due to changes in Amyris's business and various risks and uncertainties, including those associated with any delays or failures in development, production and commercialization of products, liquidity and ability to fund capital expenditures, Amyris's reliance on third parties to achieve its goals, and other risks detailed in the "Risk Factors" section of Amyris's quarterly report on Form 10-K filed on April 2, 2013. Amyris disclaims any obligation to update information contained in these forward-looking statements whether as a result of new information, future events, or otherwise.

STRATEGY

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The Industrial Bioscience Company

- ✓ Proven technology, multiple molecules
- ✓ Operating at industrial manufacturing scale
- ✓ Differentiated & proven business model

KEY COMPANY HIGHLIGHTS

- Founded in 2003 by post-doctoral fellows from the University of California, Berkeley.
- Headquartered in the San Francisco Bay Area and with operations in Brazil
- 395 full-time employees (27% of US employees are PhDs)
- Over 135 issued patents and nearly 300 pending applications

LEADING INVESTORS

TOTAL · TEMASEK HOLDINGS · KPCB · Fidelity INVESTMENTS · BIOLDING investment · TPG BIOTECH · khosla ventures · naxos

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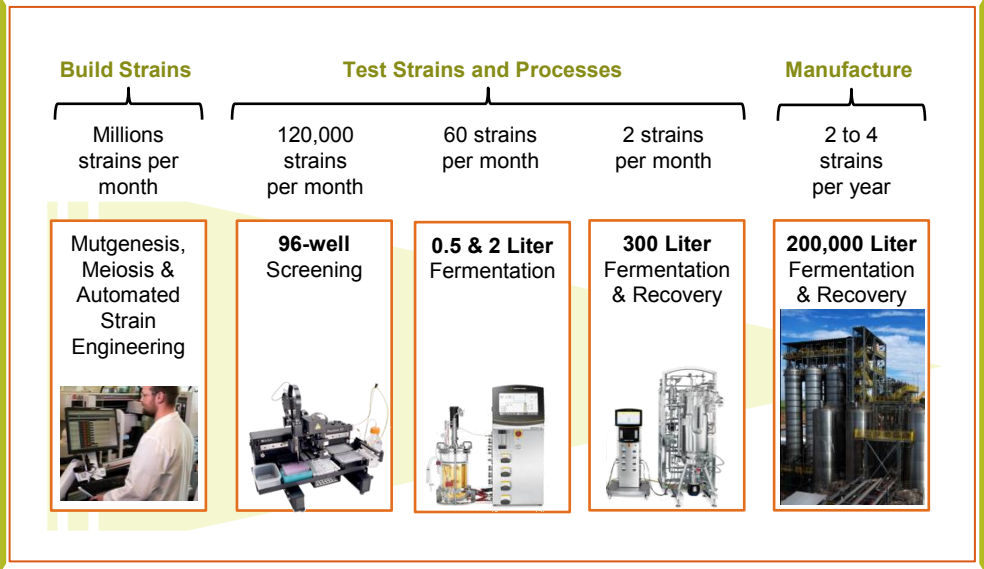
What We Do

Target Market Characteristics

Price & Supply Volatility

Consumer Demand for Naturals

Need for Higher Performance at Competitive Price



Cosmetics
- Cosmetic Emollients

Aromas
- Flavors & Fragrances

Perf. Materials
- Polymers
- Solvents and Fluids

Fuels
- Diesel
- Jet Fuel

Lubricants
- Base Oils
- Finished Lubricants

LEADING COLLABORATION PARTNERS

TOTAL · SANOFI · Firmenich · Givaudan · kuraray · cosan · IFF · MICHELIN · BASF The Chemical Company

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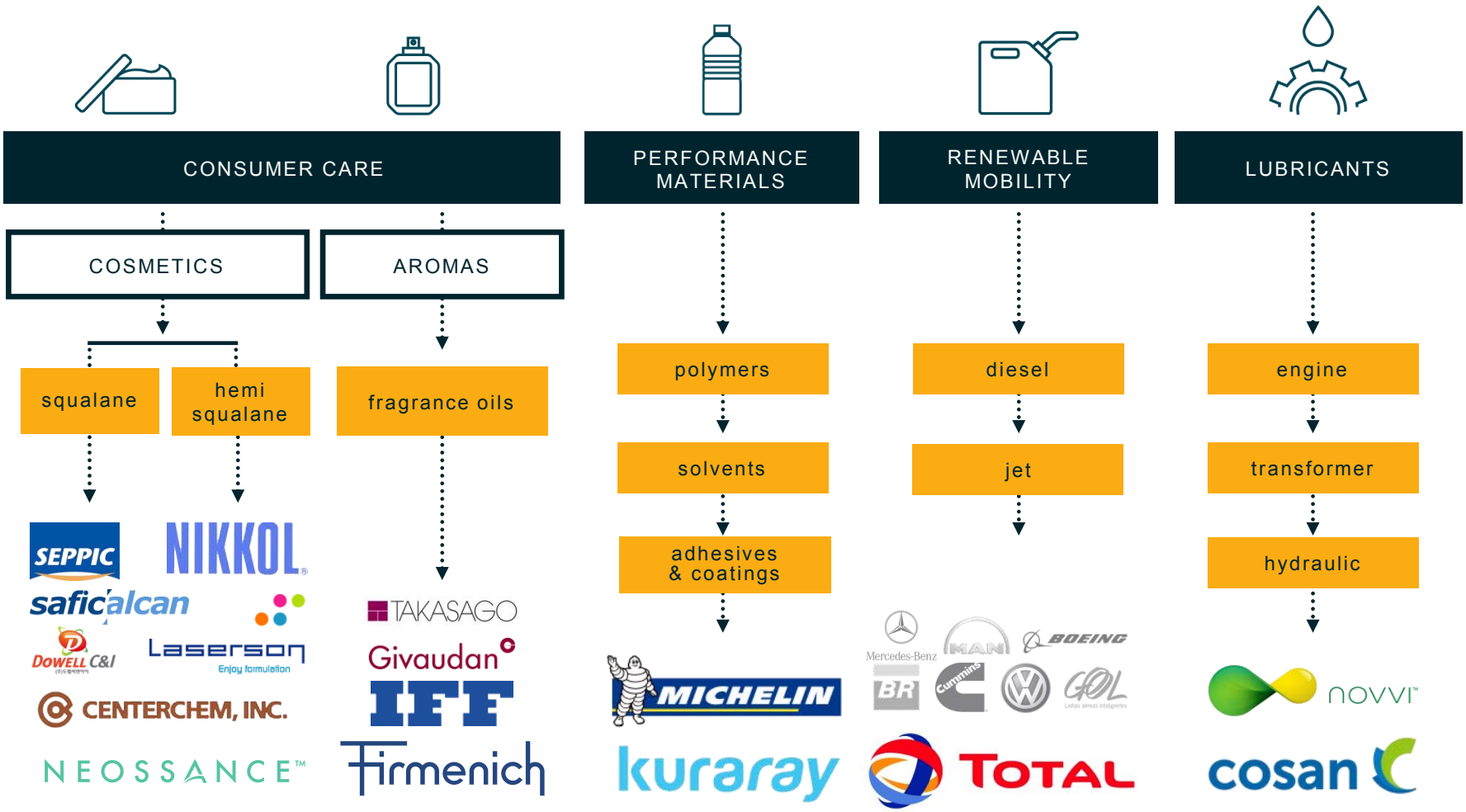
Industry Leading Product Portfolio



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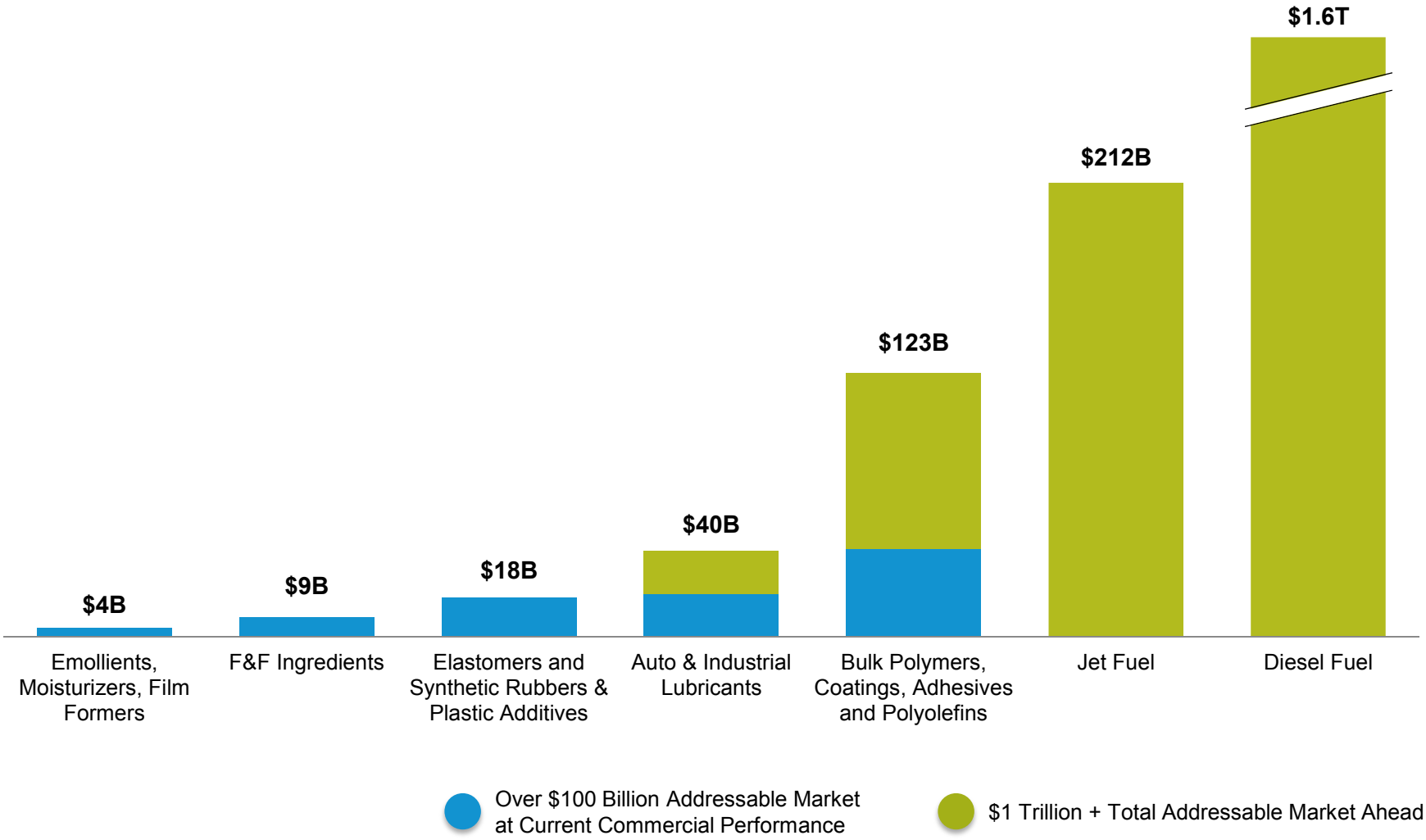
Current Addressable Markets



Amyris Living Factories

YEAST CELL

"Baker's Yeast"

Saccharomyces cerevisiae

VITAMINS

PHARMACEUTICALS

Fatty Acid Synthesis

phosphoenol-pyruvate

pyruvate

acetaldehyde

ETHANOL

OH

Acetyl CoA

Isoprenoid Synthesis

IPP/DMAPP

GPP

monoterpenes

FPP

sesquiterpenes

FRAGRANCE OILS

FARNESENE

ARTEMISINIC ACID

ISOPRENE

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FUELS

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The Global Aviation Industry's Goals

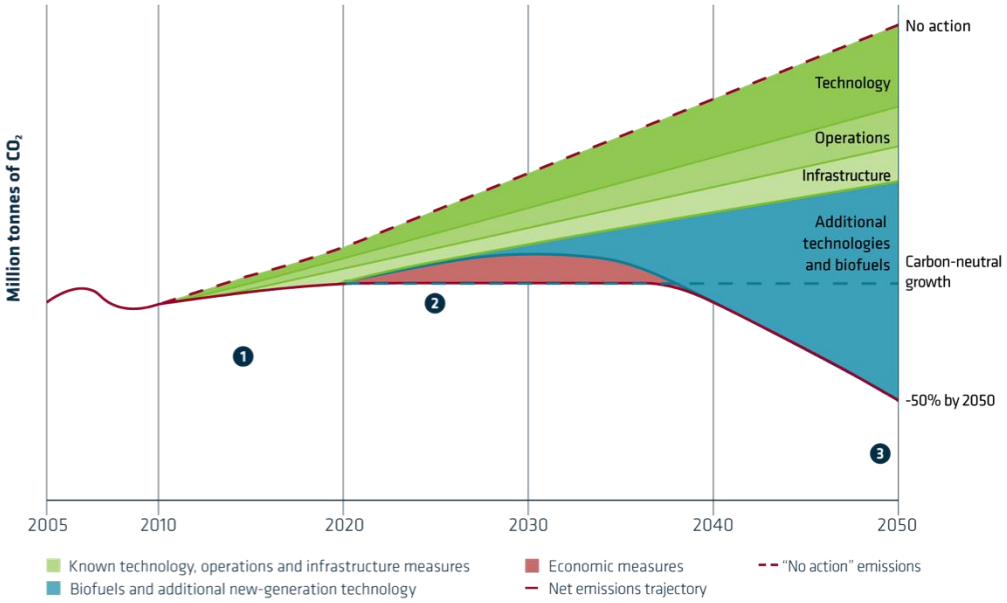
2010
1.5% fuel efficiency gain per year
Working towards carbon neutral growth

2020
Carbon-neutral growth
Implementation of global sectorial approach

2050
50% cut in GHG emissions
Reduce GHG emissions by 50% over 2005

Amyris & TOTAL fully support the global climate action targets of the aviation industry.

We are helping achieve these goals with the launch of our renewable jet fuel.



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Amyris Fuels Strategy

MARKET

World market for diesel and jet fuel is over $1.5 trillion currently, with considerable growth in emerging markets as consumption and mobility increase.

OPPORTUNITY

Increasing pressure for cleaner-burning renewable fuels creates opportunity for introducing drop-in fuels, initially in niche markets.

SOLUTION

Amyris Diesel and Jet fuels are designed to be drop-in, cost competitive replacements for fossil fuels, compatible with existing engines yet with superior performance.

EXECUTION

- ✓ Tests carried out by Mercedes-Benz, MAN, Cummins show a significant reduction in the emissions of particulate matter and oxides of nitrogen (NOx) with as little as 10% blends of Amyris Diesel. About 400 public transit buses use Diesel de Cana® in Brazil everyday.
- ✓ Following multiple successful demonstration flights and testing, our jet fuel received ASTM certification in June. Commercial flights beginning now.

RENEWABLE AVIATION FUEL JOINT DEVELOPMENT PROGRAM

Breaking the Barriers with Breakthrough Jet Fuel Solutions

TOTAL | AMYRIS

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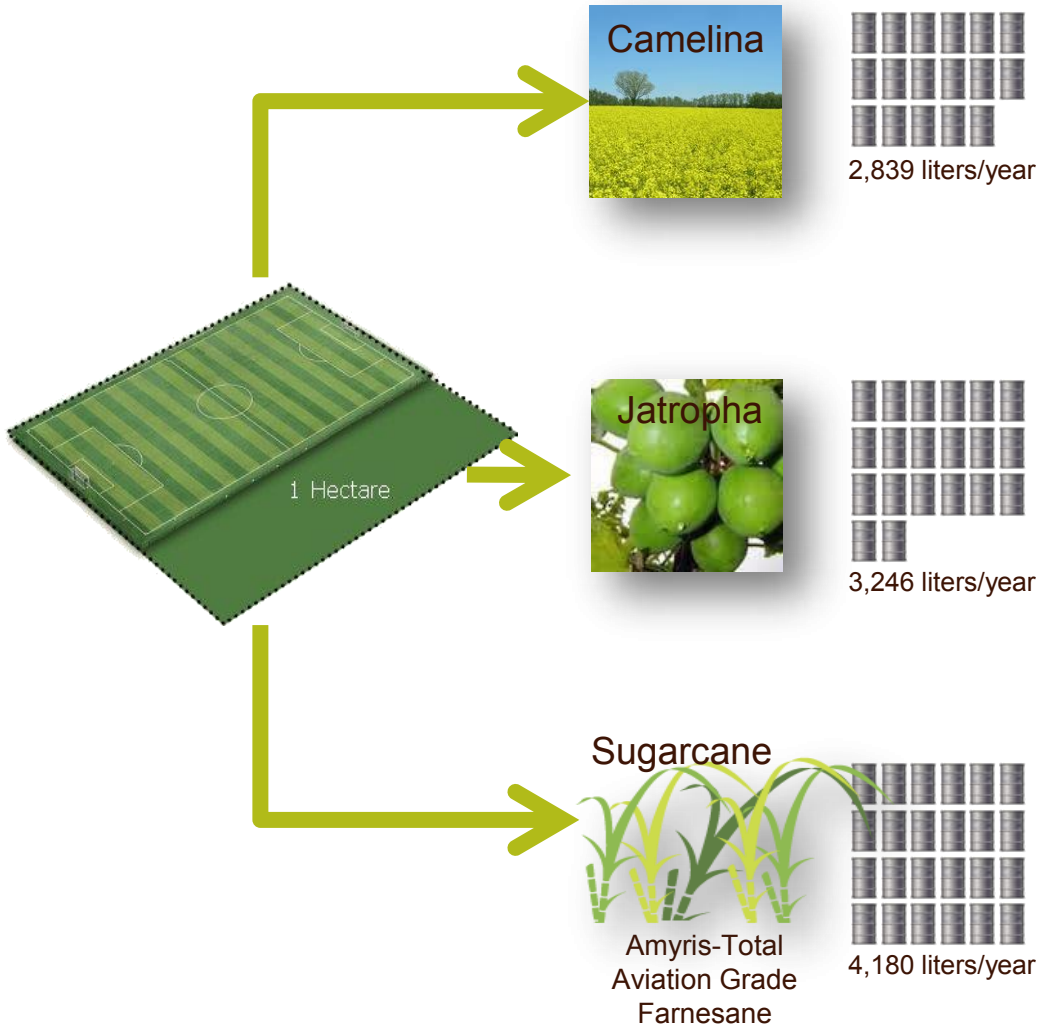
Amyris-Total Strategic Alliance

Total is a trusted aviation fuel supplier with infrastructure and track-record of success in the aviation industry globally.

Amyris has a breakthrough technology to convert sustainably-produced sugars into high-value hydrocarbon molecules,

- ✓ ASTM has amended its standard for jet fuel to permit 10% blends of our renewable farnesane in Jet A/A1.
- ✓ Lifecycle analysis indicated our renewable jet fuel can reduce emissions by over 80% when compared with conventional jet fuel.
- ✓ Amyris has jet-grade farnesane ready for delivery and is in discussions with multiple airlines for long-term supply agreements.

Environmental Benefits



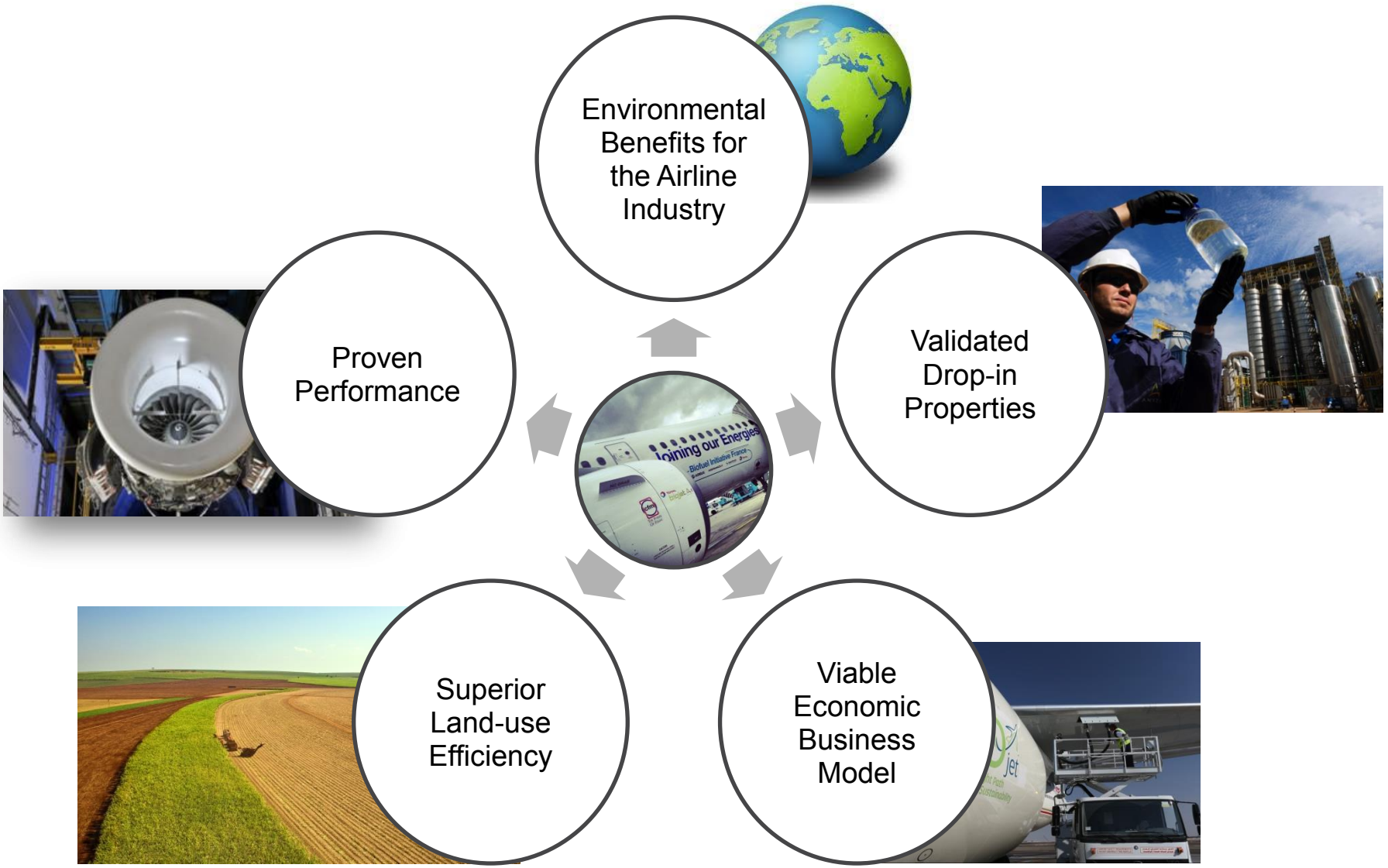
Amyris – Total Renewable Jet Fuel produced from sugarcane reduces GHG emissions by 80% thanks to its superior land use efficiency.

And with cellulosic sugars, we will produce even more renewable farnesane per hectare of land, further reducing emissions.

That's a sustainable path.

NOTE: Amyris Biofene at target yield production

The New Standard for Renewable Jet Fuel



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FEEDSTOCK

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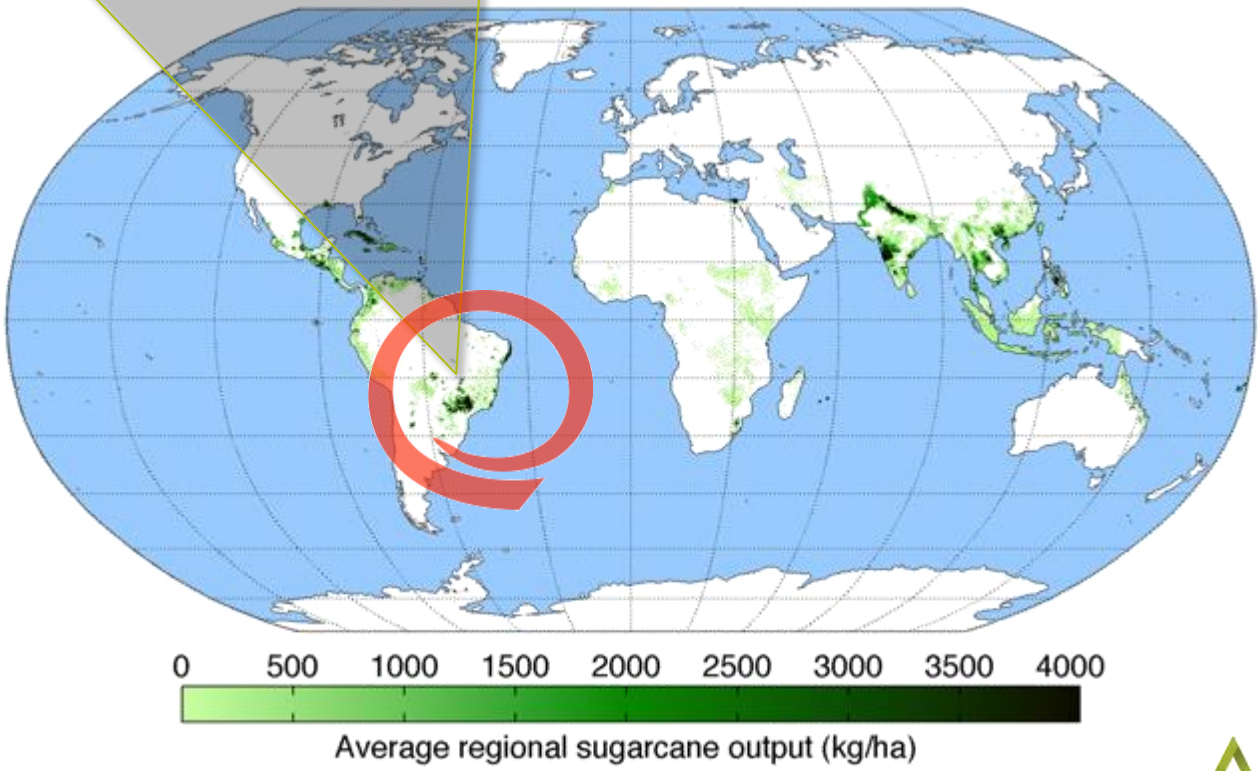
Sugarcane

- Brazil is the **world's largest cane producer**, twice #2 India
- Brazil's **South-Central region accounts for 90%** of country's cane harvest
- Brazil's sugarcane sugar **yields have grown at 3%** CAGR since late 1970s



Lignocellulosic Conversion

NABC National Advanced Biofuels Consortium

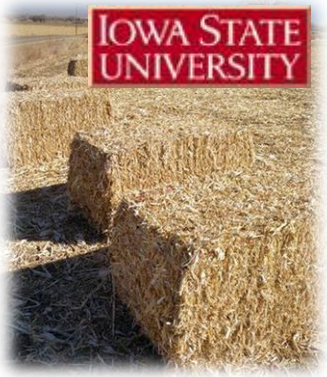
National Advanced Biofuels Consortium

Conversion of Cellulosic Sugars into Diesel

Amyris-led process strategy

Feedstock Supply	Pretreatment & Hydrolysis	Clarification & Concentration	TEA LCA	Fermentation of C5 & C6 Sugars	Farnesene Recovery & purification	Product Finishing & Blending
Iowa State University Catchlight Energy (A Chevron | Weyerhaeuser Joint Venture)	Washington State University	PALL	Argonne National Laboratory NREL National Renewable Energy Laboratory	Amyris	Amyris	Tesoro

Cellulosic Diesel Pilot Runs Completed



¾” Hammer Milled Corn Stover

Dilute Acid Pretreatment; Enzymatic Hydrolysis

Solids Clarification (Cross-flow filtration)

PALL

Vacuum-assisted Concentration

300 L fermentation

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Image courtesy of Idaho National Laboratory (INL) Bioenergy Program (www.inl.gov/bioenergy) (corn stover image); Other images courtesy of NREL. (http://www.nrel.gov/biomass/integrated_biorefinery_research_facility.html)

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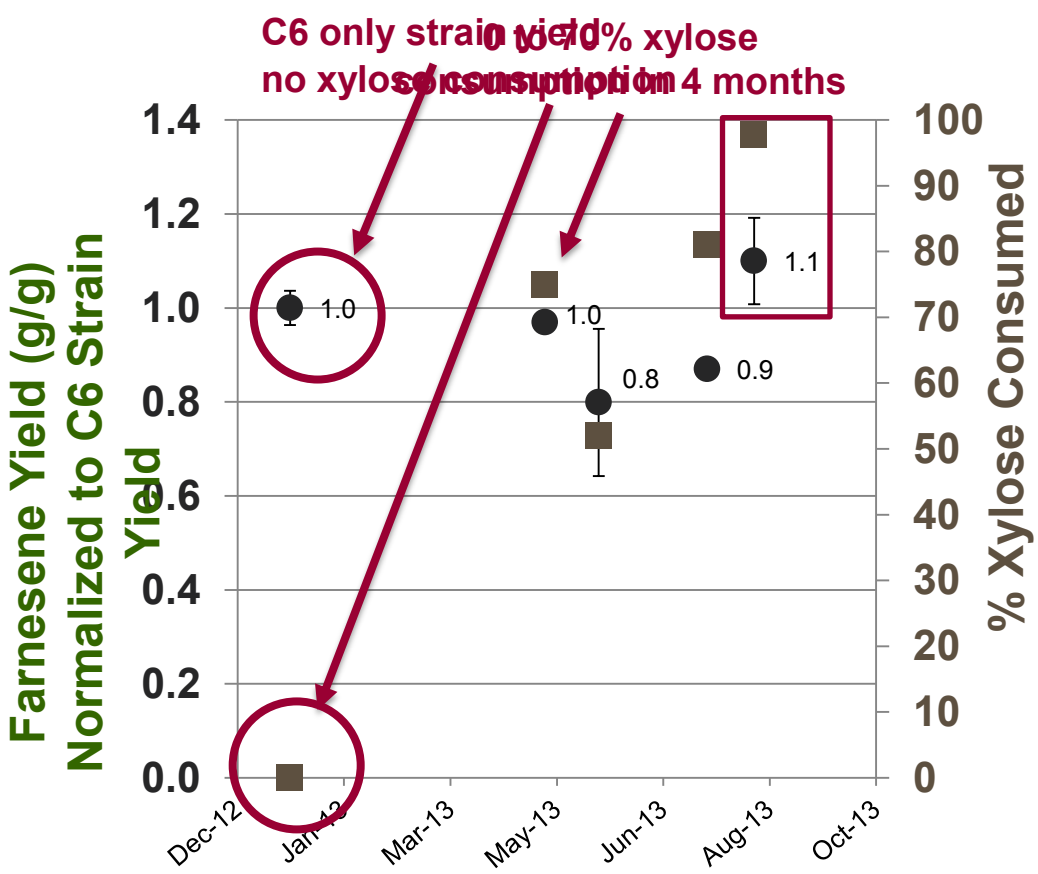
Amyris Yeast Consumes >98% of the Xylose



0.5 L Fermentations, defined minimal media, 300 g/L glucose + 150 g/L xylose

- Final C5/C6 farnesene strain consumes >98% of the xylose
  - Strain *co-consumes* glucose and xylose in the aerobic fermentation
  - First use of a xylose isomerase at Amyris
  - 5 FTE's and 9 months

Next Steps

1. Identify toxicity of concentrated hydrolysates
2. Explore new feedstocks/pretreatments
3. Focus on techno-economics, deployment strategies

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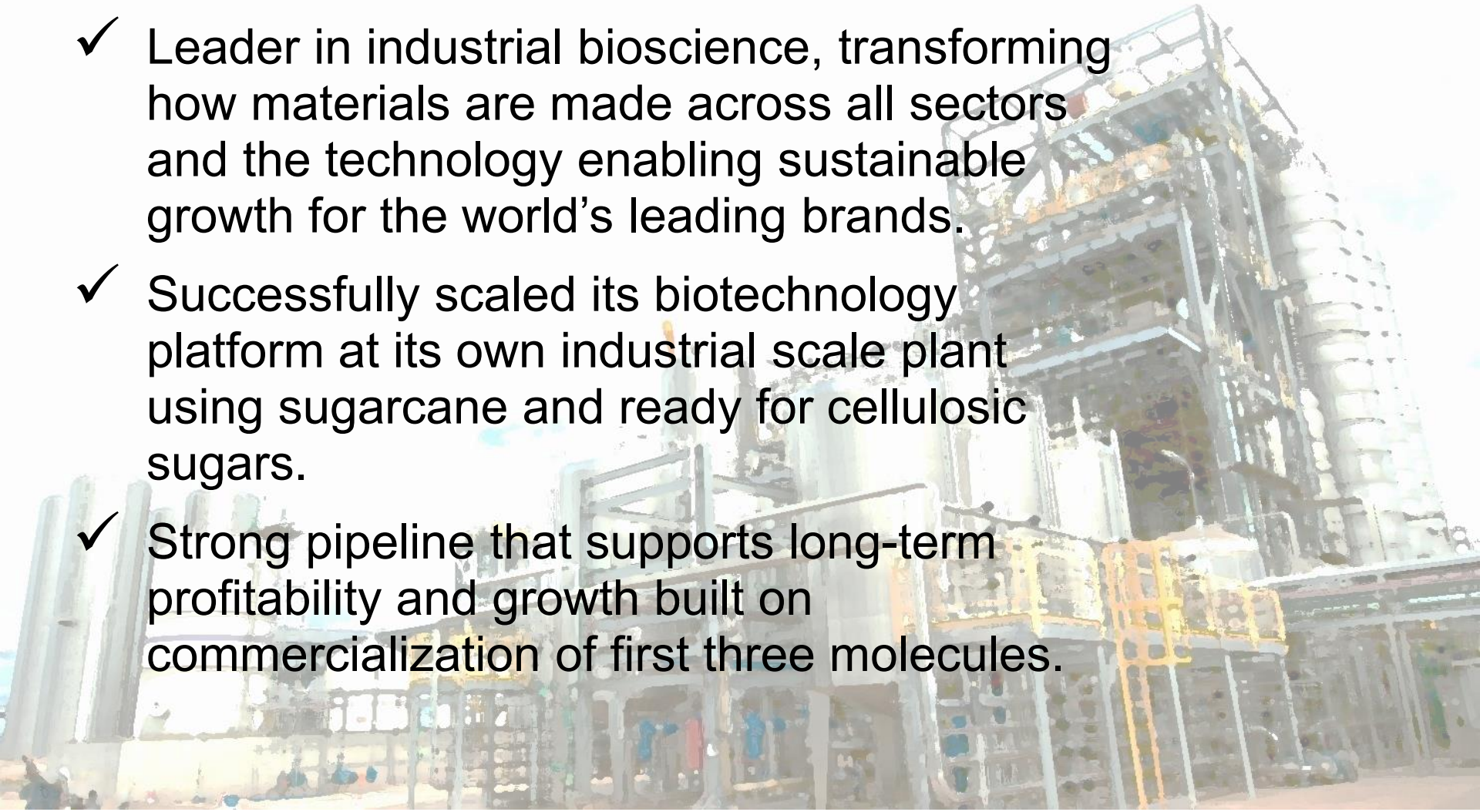
CONCLUSION

Enabling the Bioeconomy



- ✓ Leader in industrial bioscience, transforming how materials are made across all sectors and the technology enabling sustainable growth for the world's leading brands.
- ✓ Successfully scaled its biotechnology platform at its own industrial scale plant using sugarcane and ready for cellulosic sugars.
- ✓ Strong pipeline that supports long-term profitability and growth built on commercialization of first three molecules.

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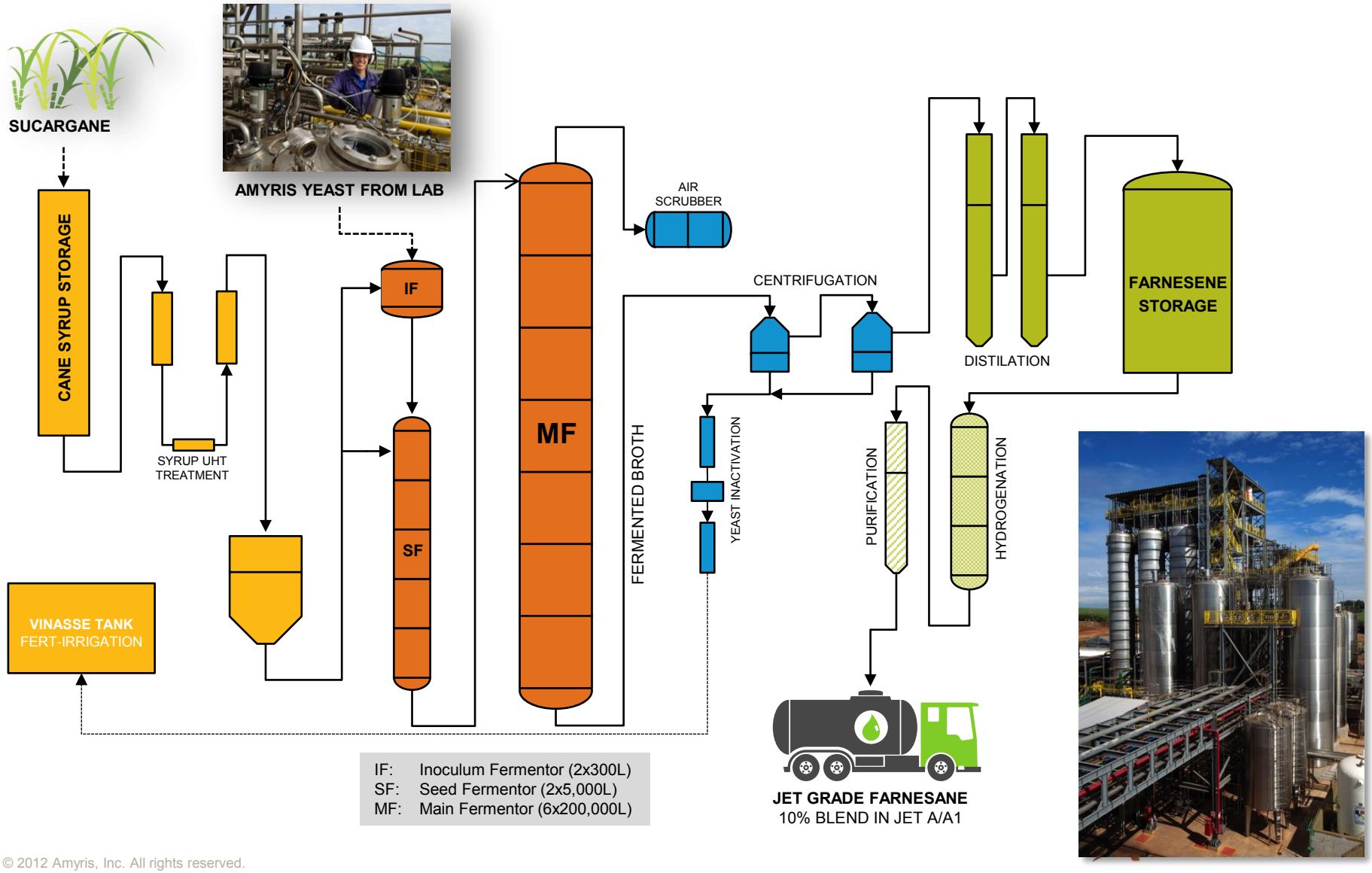
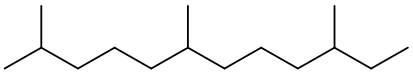
Simplified Amyris Production Process



Renewable Jet Fuel Properties

Product		Amyris-Total Jet	Kerosene Jet A1[1]
Fuel Origin		 Renewable Farnesane Biomass from Sugarcane	Fossil
Key Properties	Flash Point, °C	≥100	40.5 to 46.0
	Net heat of Combustion, MJ/kg	≥ 43.50	43.073 to 43.445
	Particulate Emissions	Reduction Potential[1]	No reduction potential foreseen
	Freezing Point, °C	<<-100	-89.4 to -49

Farnesane is a pure drop-in long-chain hydrocarbon molecule with category defining attributes in the renewable jet fuel segment, such as heat of combustion and freezing point.

[1] Lufthansa report , Engine Emission Ground-Tests with Jet A-1 / Farnesane Blends
[2] Method ASTM D7193 (automatic freezing point)

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Farnesane Aviation Grade Properties

Property		SIK	Method
Hydrocarbon Composition			
Saturated Hydrocarbons, mass %	Min	98	X001
Farnesane, mass %	Min	97	X001
Hexahydroxyfarnesol, mass %	Max	1.5	X001
Olefins, mgBr_2/ 100 g	Max	300	ASTM D2710
Aromatics, mass %	Max	0.1	NF M 07-073
Carbon and Hydrogen, mass %	Min	99.5	ASTM D5291
Non-hydrocarbon Composition			
Nitrogen, mg/kg	Max	2	ASTM D4629
Water, mg/kg	Max	75	ASTM D6304
Sulfur, mg/kg	Max	2	ASTM D5453 ASTM D2622
Metals (ppm)	Max	0.1 per metal	UOP 389
Halogens (Cl, Br, I, F) , mg/kg	Max	1 per halogen	ASTM D7359

- **Farnesane aviation grade is a pure hydrocarbon grade**
- **Farnesane aviation grade meets compositional specifications of SPK** (Table A1.2, ASTM D7566)
- **Analytical GC-FID method has been developed to measure and control the purity of farnesane aviation grade** (to be converted in an ASTM method)

Economic Viability