



# Sugarcane Drop-in fuels

June 2013



# The power of sugarcane!



- one of the most energy efficient crops
  - Economically competitive with fossil fuels
  - Powers  $\sim\frac{1}{2}$  of Brazilian cars
  - $\sim 90\%$  cars sold in Brazil are flex
  - But is mostly for spark engines. until now...
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- **With Amyris technology, Sugarcane power becomes available for:**
    - **Commercial Vehicles (Diesel)**
    - **Aviation (Jet Fuel)**

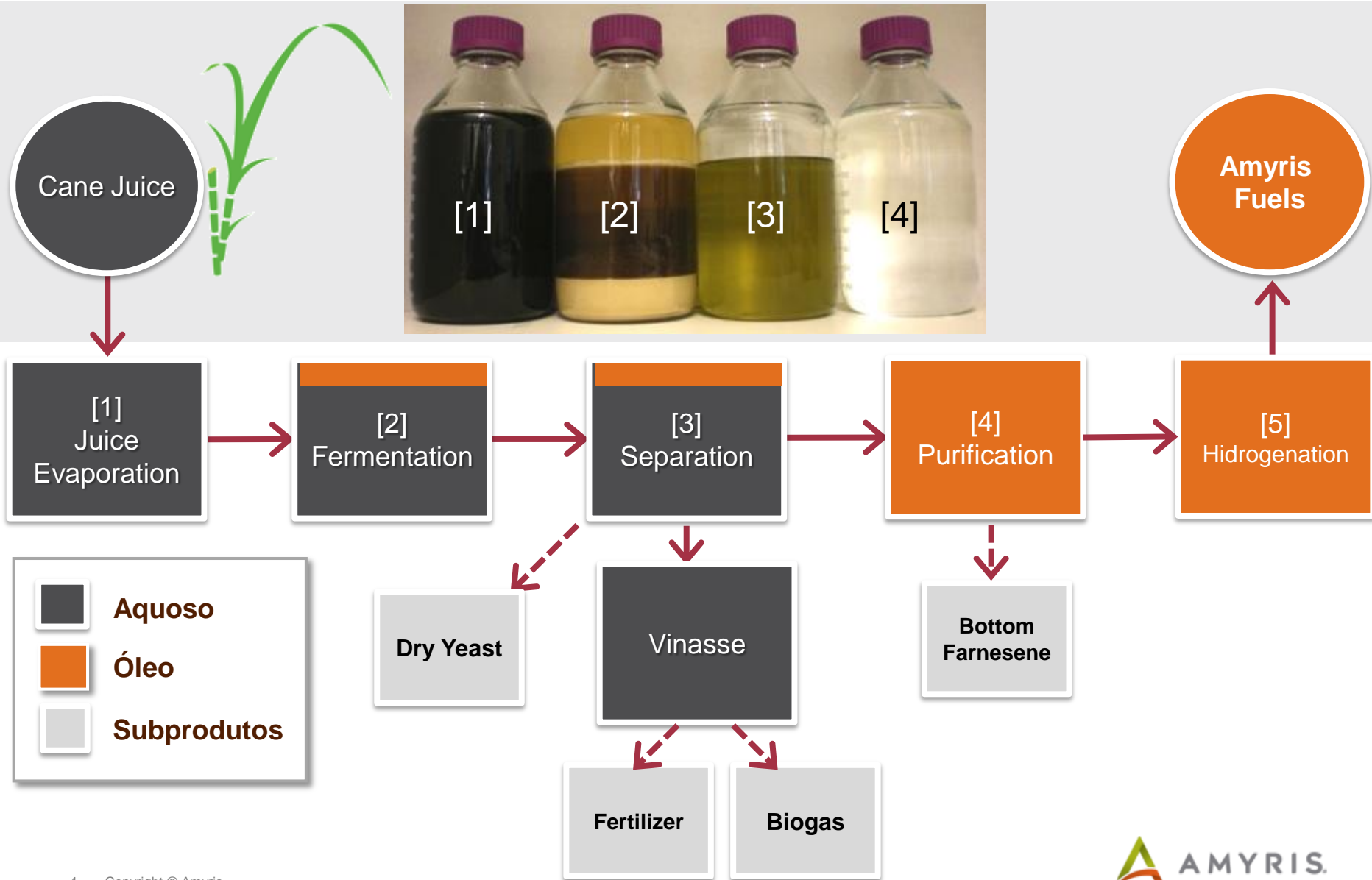
# Disruptive Platform for Renewable Products



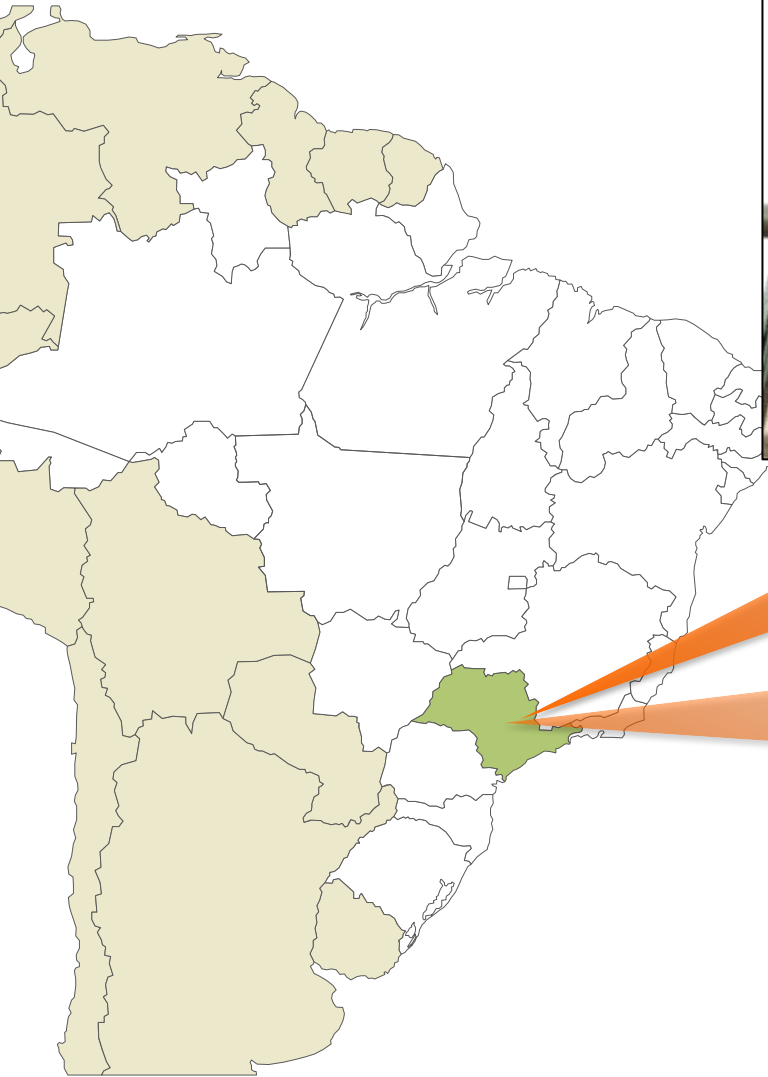
**INDUSTRIAL SYNTHETIC  
BIOLOGY PLATFORM**



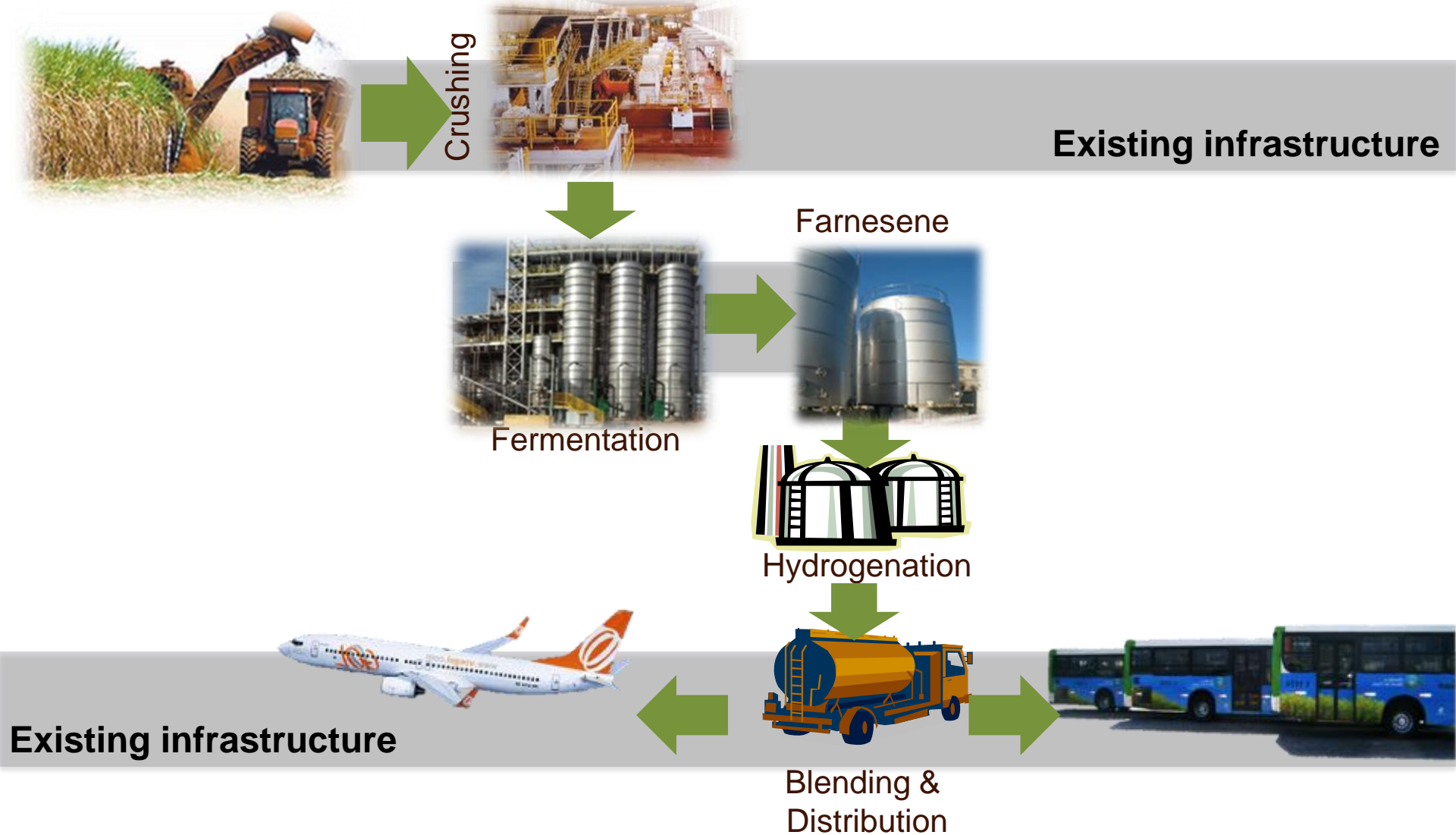
# Amyris Drop in Fuels Production Process



# First Industrial plant operating since Dec 2012



# Technology linking 2 value chains!





# “Drop-in” Properties

**Amyris Diesel is a 100% renewable solution compatible with existing engine and distribution infrastructure, showing advantages in the areas which are important to the fleet operator !**

	<b>Biodiesel (FAME)</b>	<b>Sugarcane Diesel</b>
<b>Technical maintenance</b>	increased costs (filters, wear...)	similar to diesel
<b>Vehicle adaption</b>	Adaptations required above 30%blend	no changes required
<b>Garage adaption</b>	Special tank care due to deposits/oxidation	same storage and fueling system
<b>Vehicle Aftermarket</b>	standard used vehicle	standard used vehicle
<b>Fuel Price</b>	Historically higher than fossil fuels	potentially competitive with fossil diesel, with volatility in the short term



# Proven Performance



over  
**25 million**  
km covered with  
blends of  
**Sugarcane  
Diesel**





# Successful demoflights using Sugarcane Jet Fuel



49<sup>th</sup> INTERNATIONAL  
PARIS AIR SHOW  
LE BOURGET



TOTAL



AIRBUS



Snecma  
SAFRAN Group



# Amyris-Total Jet Fuel Program

## Pathway to Market

## How do we get there ?

2009	2010	2011	2012	2013	2014	2015	2016
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## Vision for the future

## Technology



## Certification

DSHC- QAV+verde ( up to 10 % blend )

## Commercial



Flying Green Initiative



**Amyris-Total Jet Fuel marketed in blends up to 50% with fossil Jet Fuel**



intro of Higher blends to the market





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