

# BioJet

View from Brazilian Industry

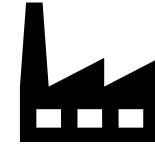
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**19, June, 2018**

# Certified Pathways



**HEFA**

**NESTE**



Fats  
Greases

TRL 9

50%

**SIP**



1G Sugars  
2G Sugars

TRL 5 – 7

10%

**FT – SPK e SKA**



MSW  
Biomass

TRL 8 – 9

50%

**ATJ – ethanol e buthanol**

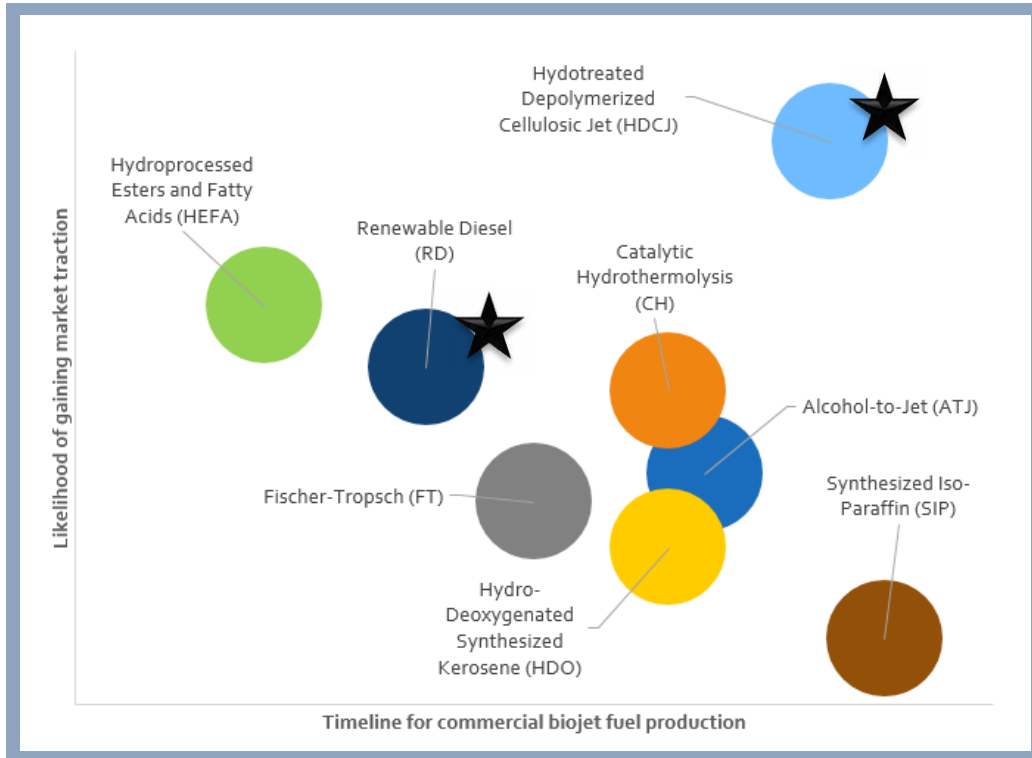


Ethanol  
Buthanol

TRL 6 – 7

30%

# Roadmap



<https://www.environmentalleader.com/2016/07/biojet-fuels-key-to-aviation-emission-cuts-report-says/> (acessado em 2018)

**HDCJ**

**ENSYN**



**HDRD**

**BOEING**



**Guidelines for  
SUCCESS**


Economic viability

Feedstock

Short-term market supply

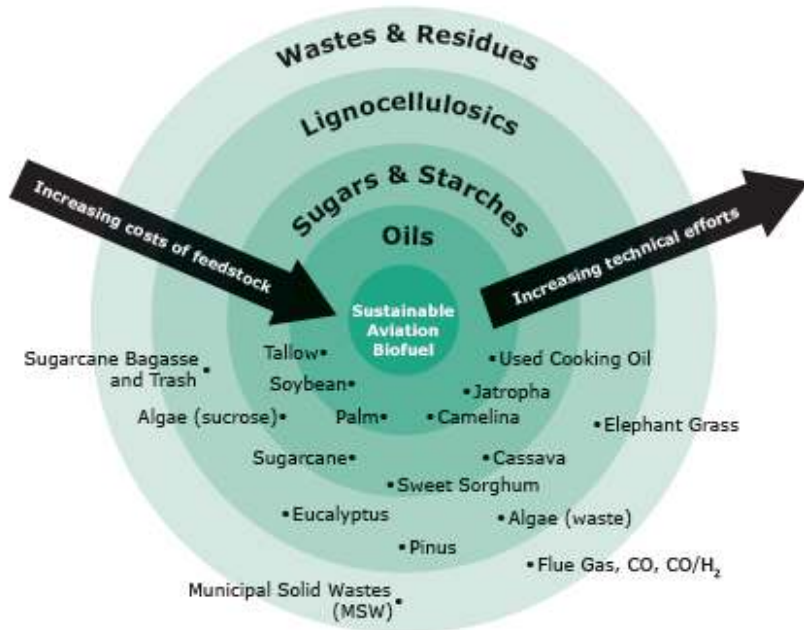
# Economic Sustainability

## Feedstocks

- Prices 
- Scale / Availability

*The cheaper the feedstock,*

*The more expensive the process?*



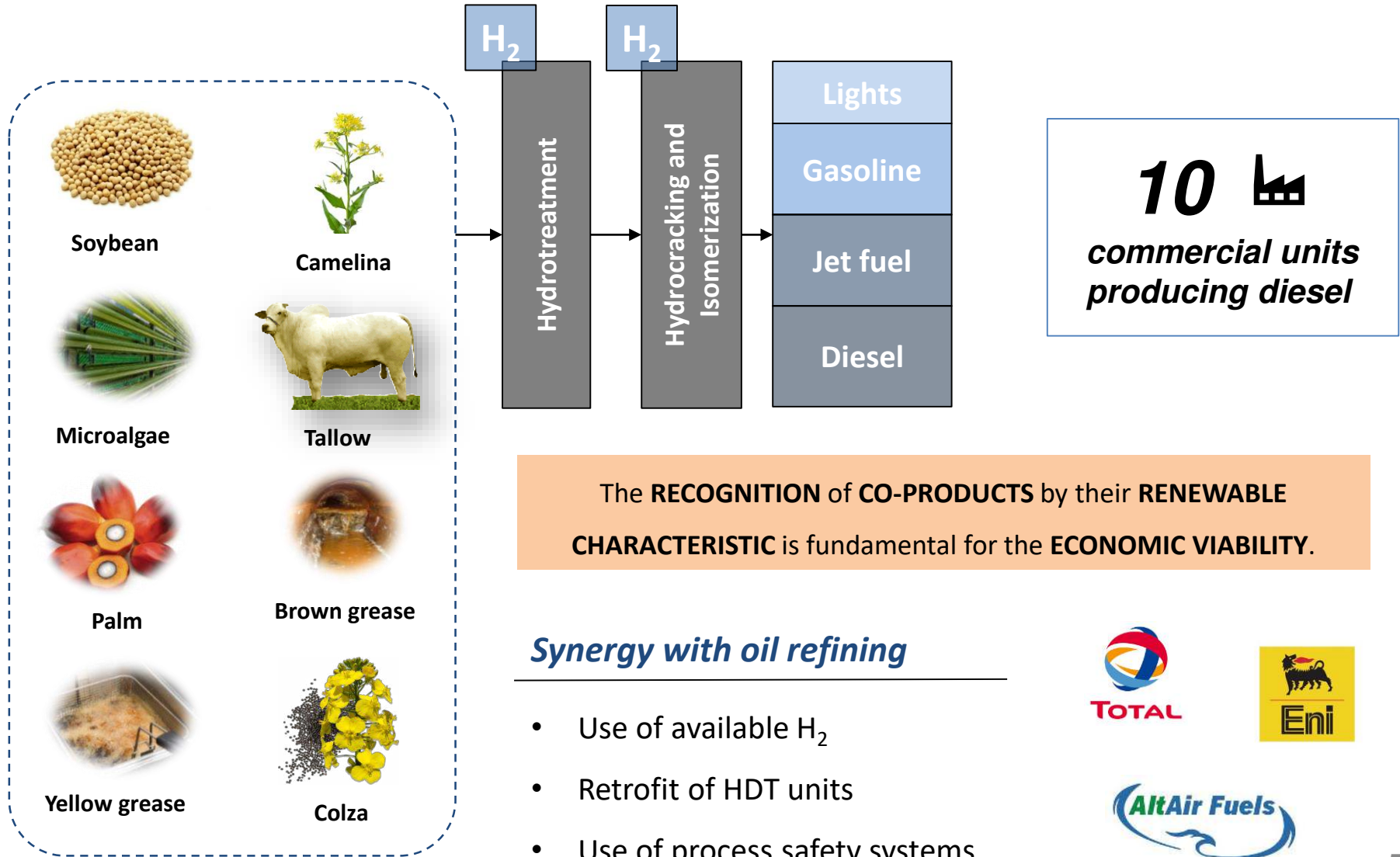
## Value chain

Biofuels have always built their economic viability through **co-products**

- Soybean biodiesel + Meal & Glycerin*
- Sugarcane ethanol + Sugar & Energy*
- Corn ethanol + DDGS*



# HEFA Pathway



The **RECOGNITION** of **CO-PRODUCTS** by their **RENEWABLE CHARACTERISTIC** is fundamental for the **ECONOMIC VIABILITY**.

## Synergy with oil refining

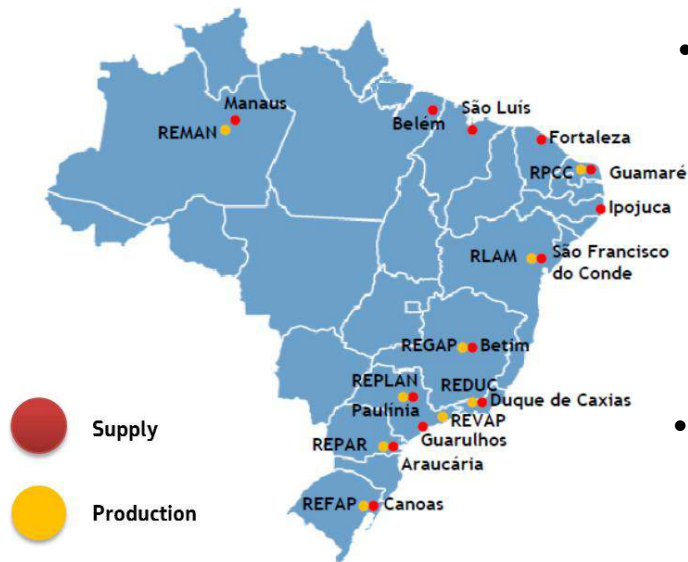
- Use of available H<sub>2</sub>
- Retrofit of HDT units
- Use of process safety systems
- Use of treatment and off-site infrastructure



# Non-technological Challenges

## Logistics

- Attendance at a national mandate has great complexity for the distribution of the **renewable fraction**.



BR Distribuidora (2016)

- Investments** in storage and mixing equipment (similar model to biodiesel) for each pathway.
- Biojet tracking management** for each pathway.
- Jet fuel **quality assurance** after mixing with renewable streams: Infrastructure and accreditation of laboratories.

## Regulations

**Recognition** of renewable co-products



Specification compatible with **international market**



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## Thank you

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