

The biofuel investment opportunity from production to distribution



Gilbert Brunner

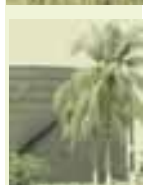
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Introduction

- **Biofuels are a renewable energy source and as such could participate to the global effort to reduce GreenHouse Gas emissions, the main source of the global warming**
- **Biofuels can be produced from a broad variety of agricultural products (i.e corn and soybeans in the United States, sugar cane in Brazil, rapeseed in Europe and palm oil in Asia)**
- **Biofuels present the same characteristics than petroleum products and consequently their use for transportation is appropriate**
- **27% of CO2 emissions come from transportation**
- **Biofuels have to be considered as a complement of fossil fuels and not as a substitute**
- **There are significant returns be expected for first movers**

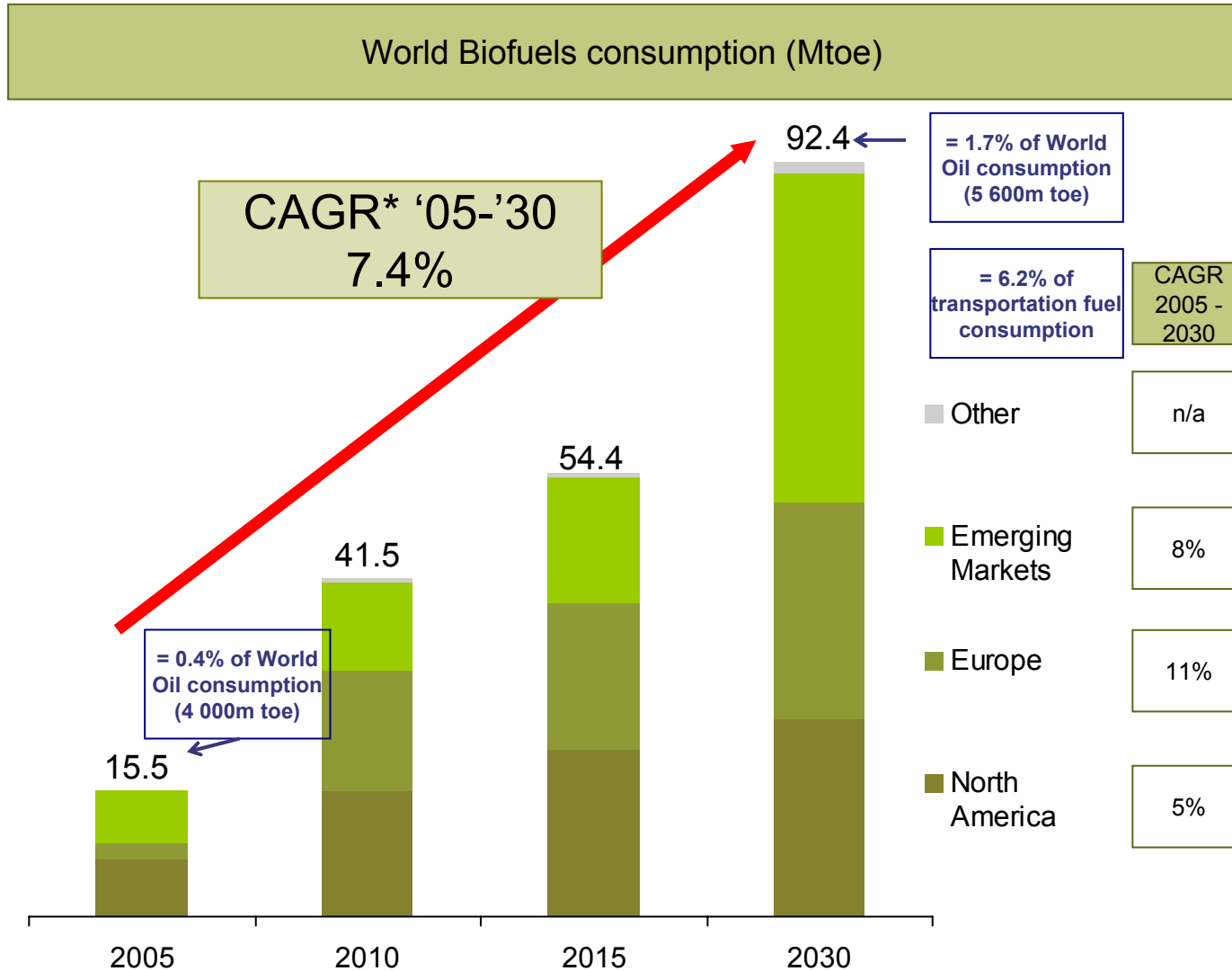


“Biofuels” a mixture of wrong assumptions

<p>Available land</p>	<p>There is enough available land in the world without any deforestation. (Brazil has today 6 millions ha producing 25 million MT of sugar and 16 million m³ of ethanol. Available land without going near the rain forest is 90 millions ha, i.e. 15 times more).</p>
<p>CO2 emission</p>	<p>Correlated to the choice of feedstock. (Between 0% and 92% reduction).</p>
<p>Irrigation</p>	<p>If needed, there are new techniques which reduce substantially the use of mechanical irrigation. (Over 90% of Brazilian sugar cane grows by rain precipitations).</p>
<p>Fertilizers</p>	<p>Selection of the right feedstock in order to minimize depreciation of the ground and, consequently, less use of fertilizers/pesticides. (Ethanol out of sugar cane uses up to 80% less chemical fertilizers than corn ethanol).</p>
<p>Food chain</p>	<p>Existing number of feedstock which are not in competition with the food chain.</p>
<p>Biodiversity</p>	<p>Global warming will make more damage to the biodiversity than biofuels, the rule to apply is “The Less Evil Choice” .</p>



“Biofuels” are experiencing strong growth worldwide

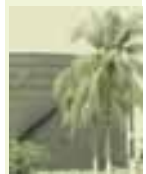


Key drivers

- Emissions targets
- Mandatory programs
- Source of domestic growth
- High oil prices
- Full commodity
- Competitive product
- MTBE bans

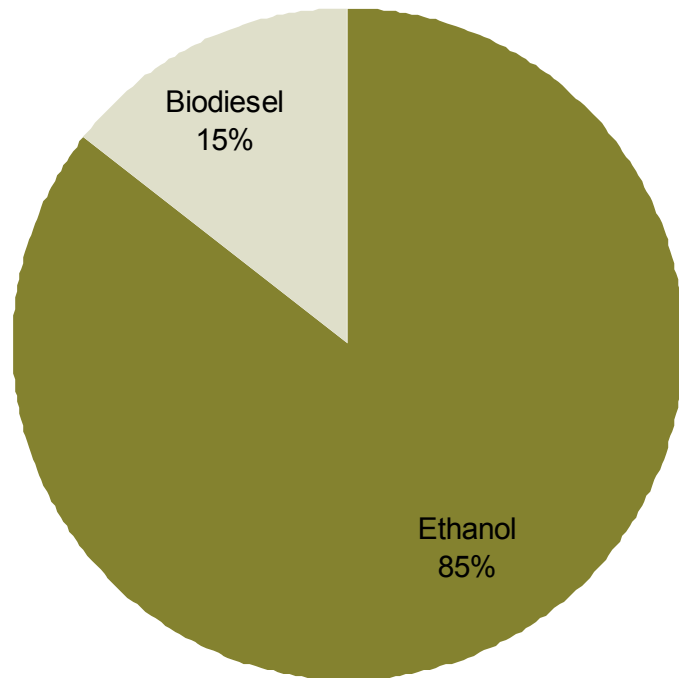
Source: OECD/IEA, World Energy Outlook 2006 based on the reference scenario
 Note: *CAGR = Compound Annual Growth Rate

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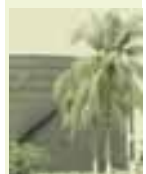


“Biofuels” are fuels derived from biological sources

Global production of Biofuels by type

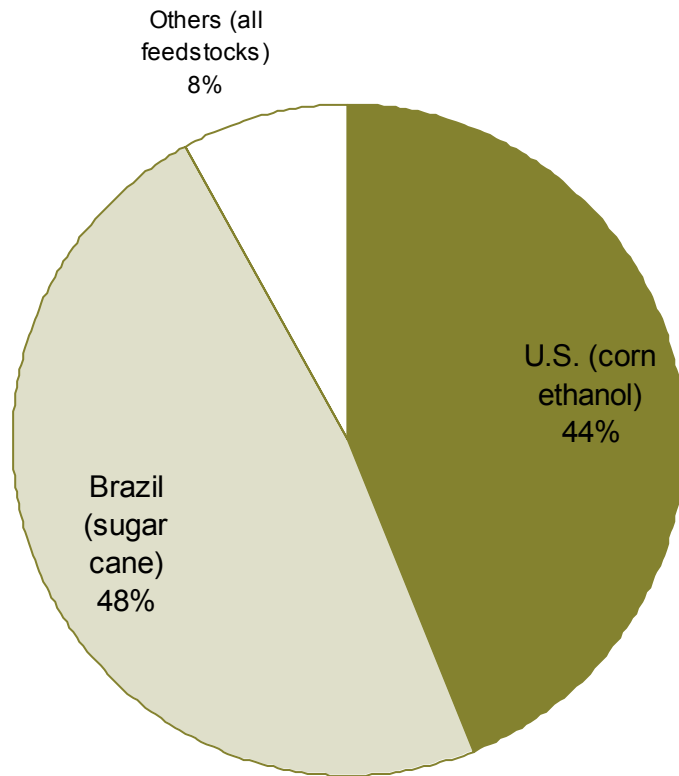


- Ethanol can be made from any sugar based feedstock. Corn is the most common feedstock in the United States, whereas sugar cane is the preferred feedstock in tropical countries.
- Biodiesel is produced from a broad variety of diesel fuel alternatives based on methyl esters of vegetable oils or fats (The main feedstock are the following: rapeseed or soybean).

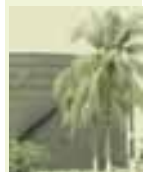


“Biofuels” are produced from a broad range of feedstock

Global production of Biofuels by country

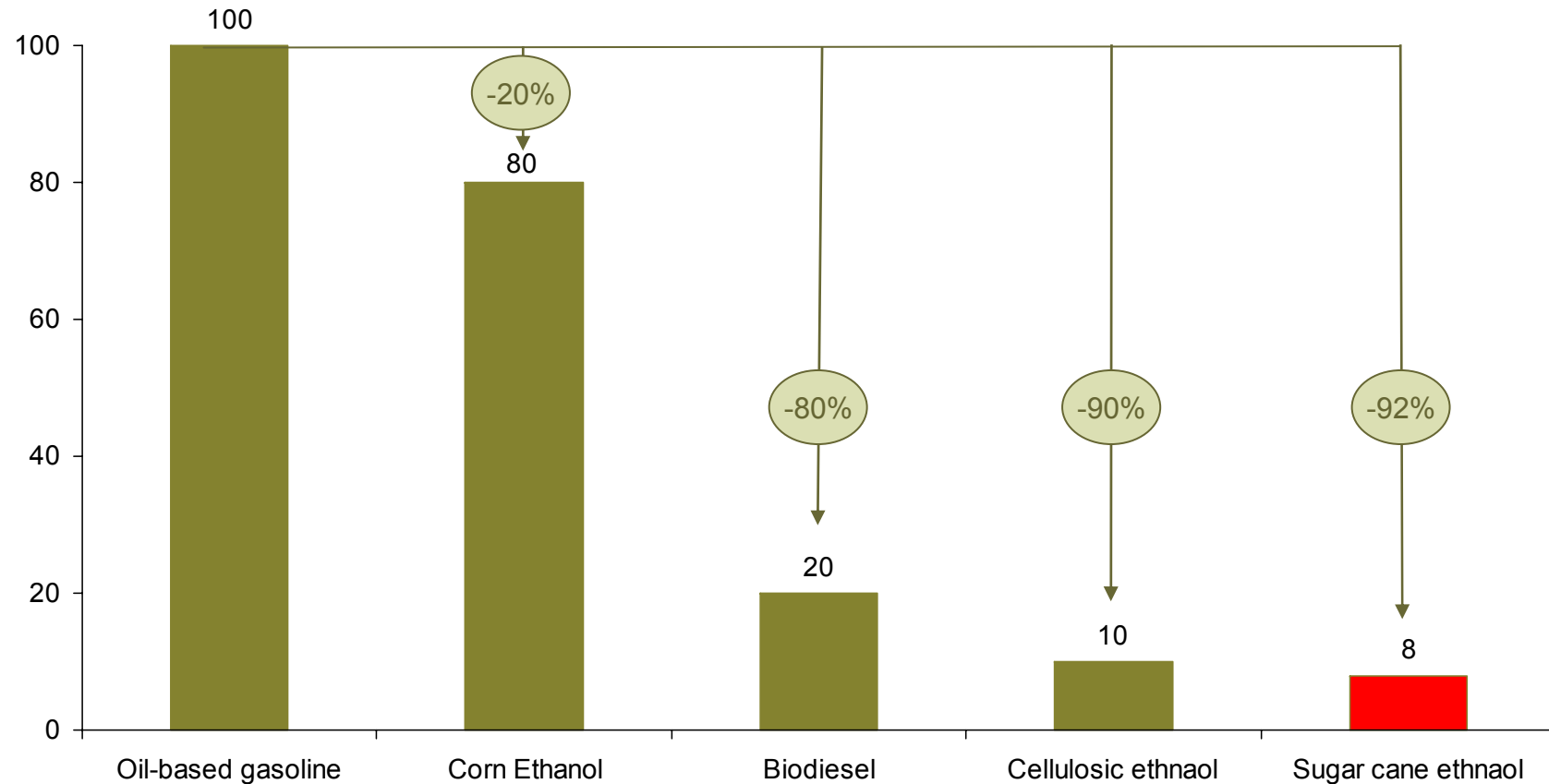


	US (corn)	Brazil (sugar cane)
CO2 emission reduction	28%	92%
Energy content output	1:1,2	1:8,3
Crop yields (liters / ha)	3,100	6,500
Food chain	High impact	No material impact



“Biofuels” are mainly here to reduce GHG emissions but they are not born equal

Sugar cane ethanol reduces Green House Gas emission by 92%*



* Well to wheel

Source McKinsey / Macedo et al / Farrell et al. "Ethanol can contribute to energy and environmental goals", Science, January 27, 2006

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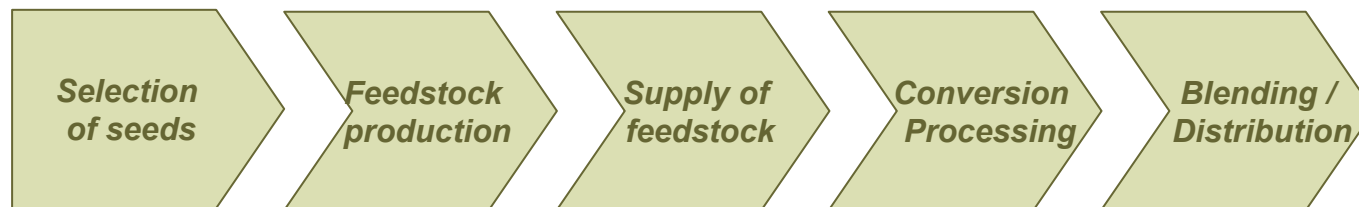
Due to many disparities, there is no benchmark in the biofuels industry

	Brazil	United States	Malaysia / Indonesia	China	Europe
Initial growth drivers	Energy independency and source of internal growth	Hiding subsidiaries to farmers following the WTO negotiation	Source of internal growth (palm)	Secure energy in order to support growth of the economy	Reduce GHG emissions
Results on current situation	Most efficient industry in the world	High production costs, limited impact on the environment and competition with the food chain	Disaster on the environment (deforestation)	Disaster on the environment (coal burn for power supply) and competition with the food chain	Inefficient industry (small production unit) and limited success of producers on stock exchange markets

“Biofuels” have a long term future worldwide as fundamental growth drivers are here to stay everywhere.



Today, the “*biofuels*” industry is highly fragmented. No players are integrated along the value chain yet



Biotech companies



Agri companies

FARMERS across Europe, US, South America and Brazil



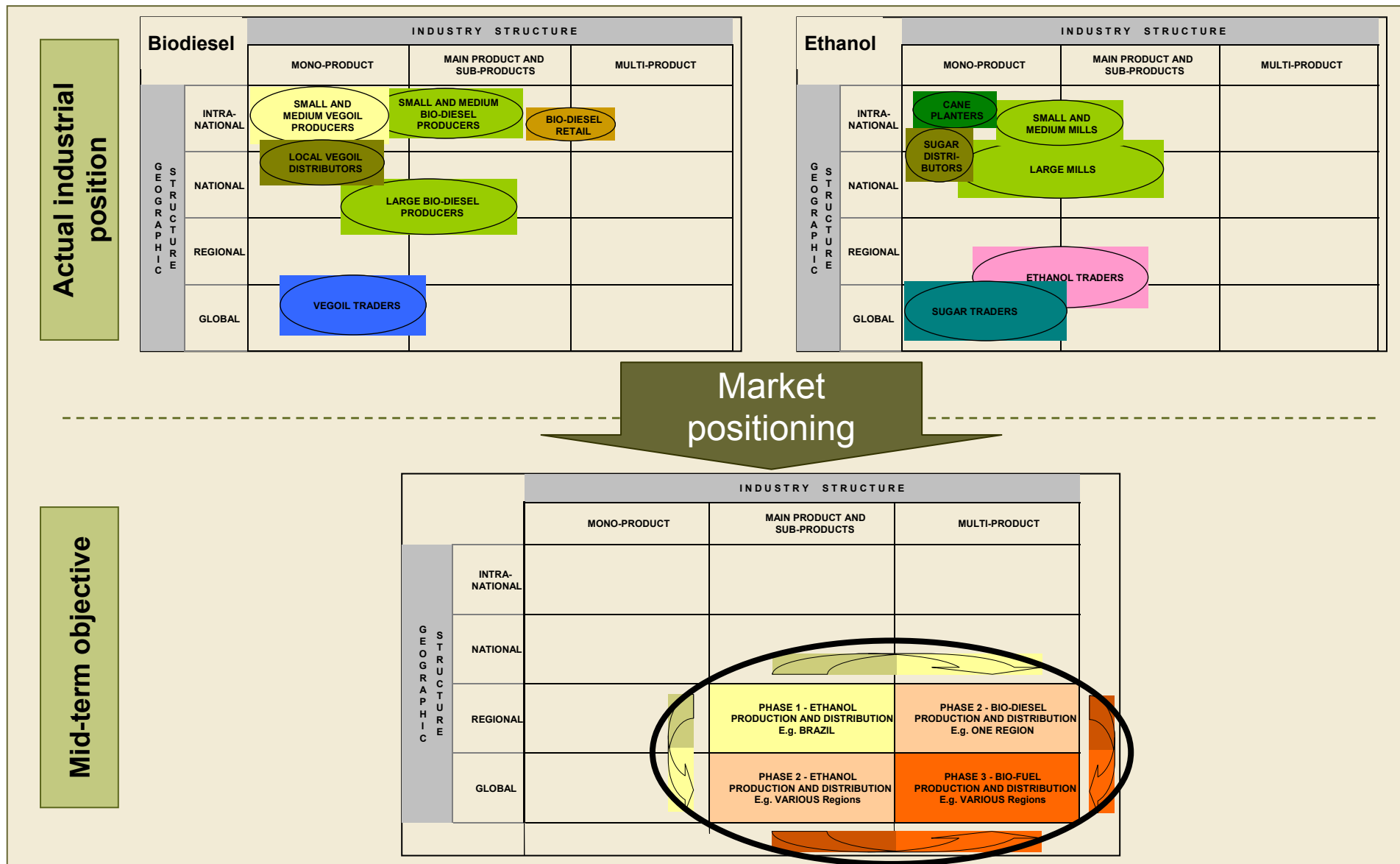
Processors



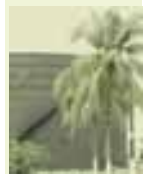
Oil majors



In the future, the market leaders will be global and integrated

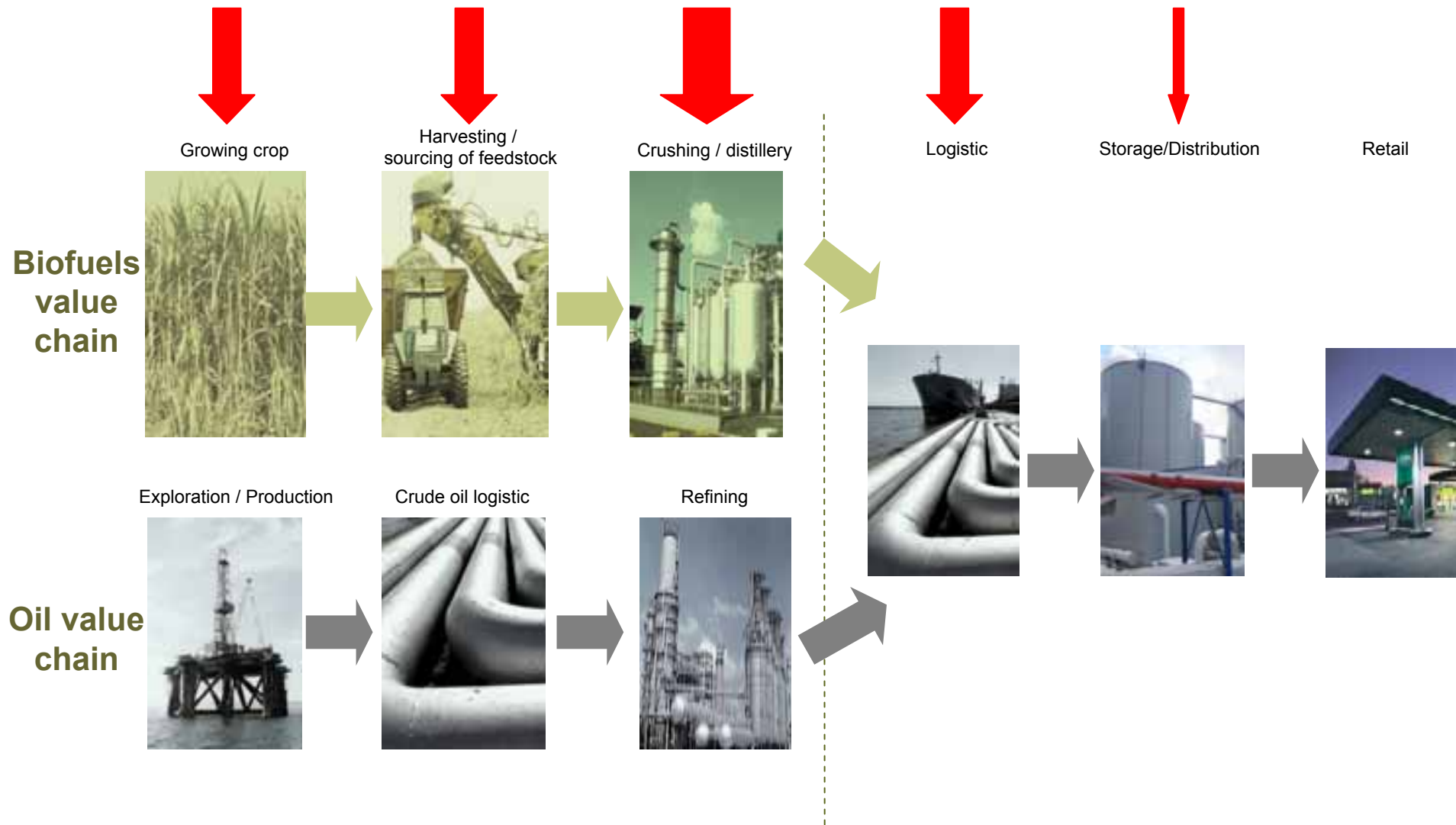


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“Biofuels” will increasingly become the combination of the both agricultural and oil industries

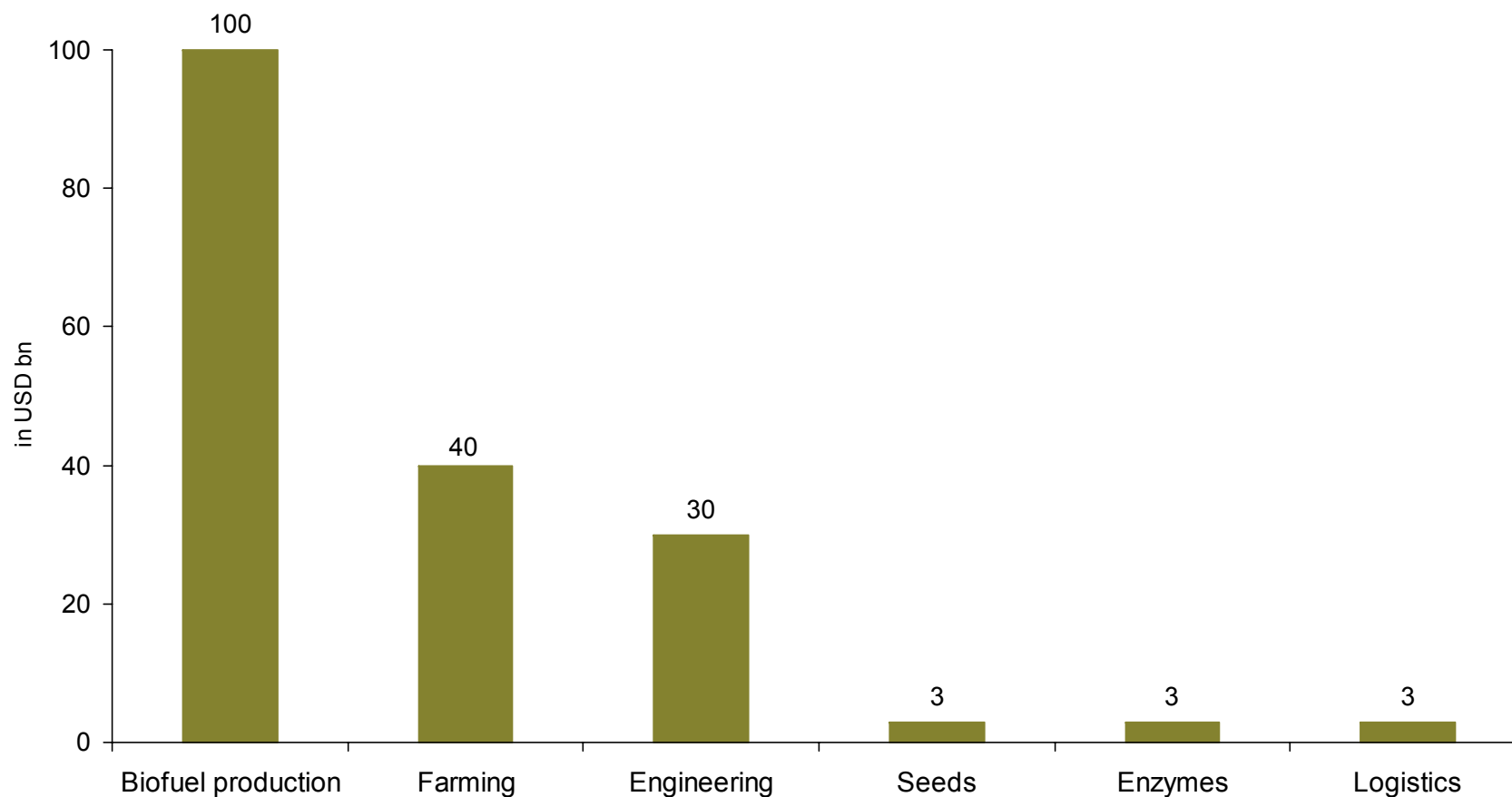
MAIN INVESTMENT OPPORTUNITIES



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Changes in the industry will provide sizeable business opportunities at each stage of the value chain

Market size of each segment of the biofuels value chain (Forecast 2020)



Source: McKinsey

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Changes offer significant investment opportunities but investors should watch out different criteria

Economical

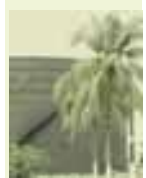
- Complexity to optimize the cost of feedstock, the cost of production and the cost of distribution
- Complexity of risk management
- Disparities in tax incentives

Ecological

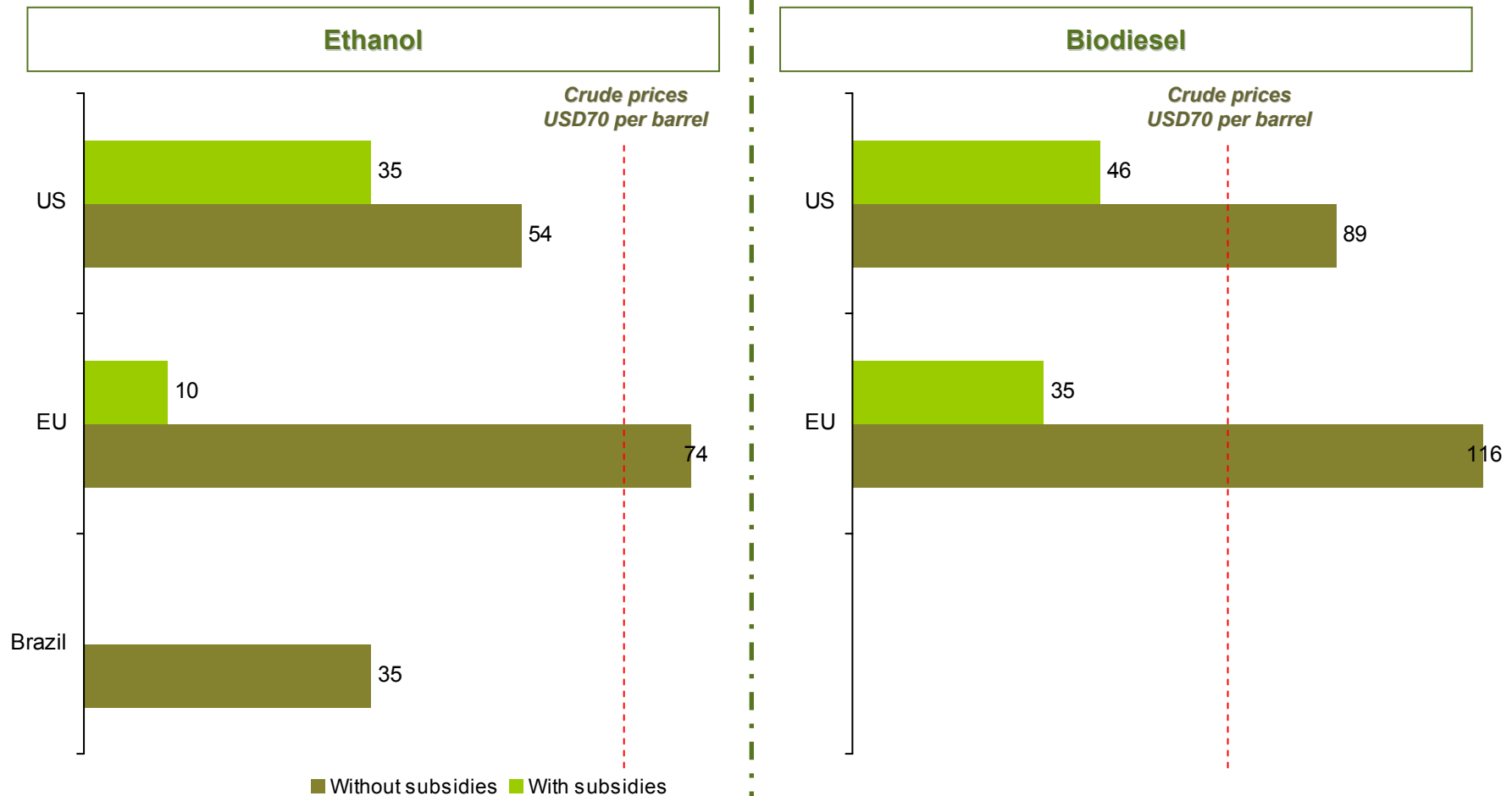
- Deforestation, irrigation, degradation of the ground and use of fertilizers
- Disparities in energy ratios (corn= 1 for 1.2 vs cane= 1 for 8)
- Difficulty to select the appropriate feedstock

Ethical

- Debate between food and non-food feedstock



The sustainability of “*biofuels*” may vary according to their breakeven point with crude oil prices



The choice of the right feedstock provide investors with natural hedges against price risks

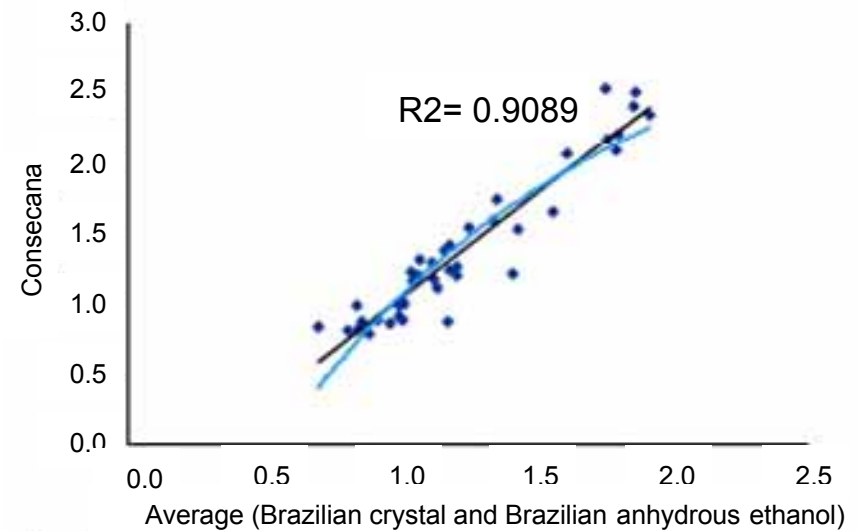
There is no correlation between the price of corn and the price of ethanol



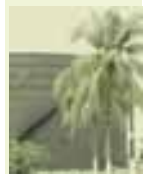
Source: Goldman Sachs

The correlation between the price of sugar and the price of ethanol is much greater

Consecana value x average local price sugar/ethanol (USD)



Source: Bloomberg andtau Correтора



Six criteria to take into consideration for a successful investment in Biofuels

- 1 Anticipate the coming changes in the market structure**
- 2 Invest in technologies and feedstock with the greater impact on the GreenHouse Gas emissions**
- 3 Take into consideration all parameters, which will become important in the near future (irrigation, deforestation etc.)**
- 4 Invest in low cost productions in order to minimize the impact of potential drop of oil prices and always be competitive at the main centers of consumption**
- 5 To be able to offer sustainability of the supply in the right quality and quantities**
- 6 To be able to play with the different tax regimes and incentives**



**For more information, please
feel free to contact us**



Gilbert BRUNNER

7 rue du Mont-Blanc
1201 Geneva
Switzerland

Email: gbrunner@fairenergy.com
Phone: +41 22 591 9191
Fax: +41 22 591 9199

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