

Biofuels: a Brazilian Perspective

Public Hearing: “Strategy for Biomass and Biofuels”

European Parliament – Committee on Industry, Research and Energy

Brussels, 1 June 2006

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1 – Ethanol

2 – Biodiesel

3 – Sustainability Aspects

4 – Conclusions

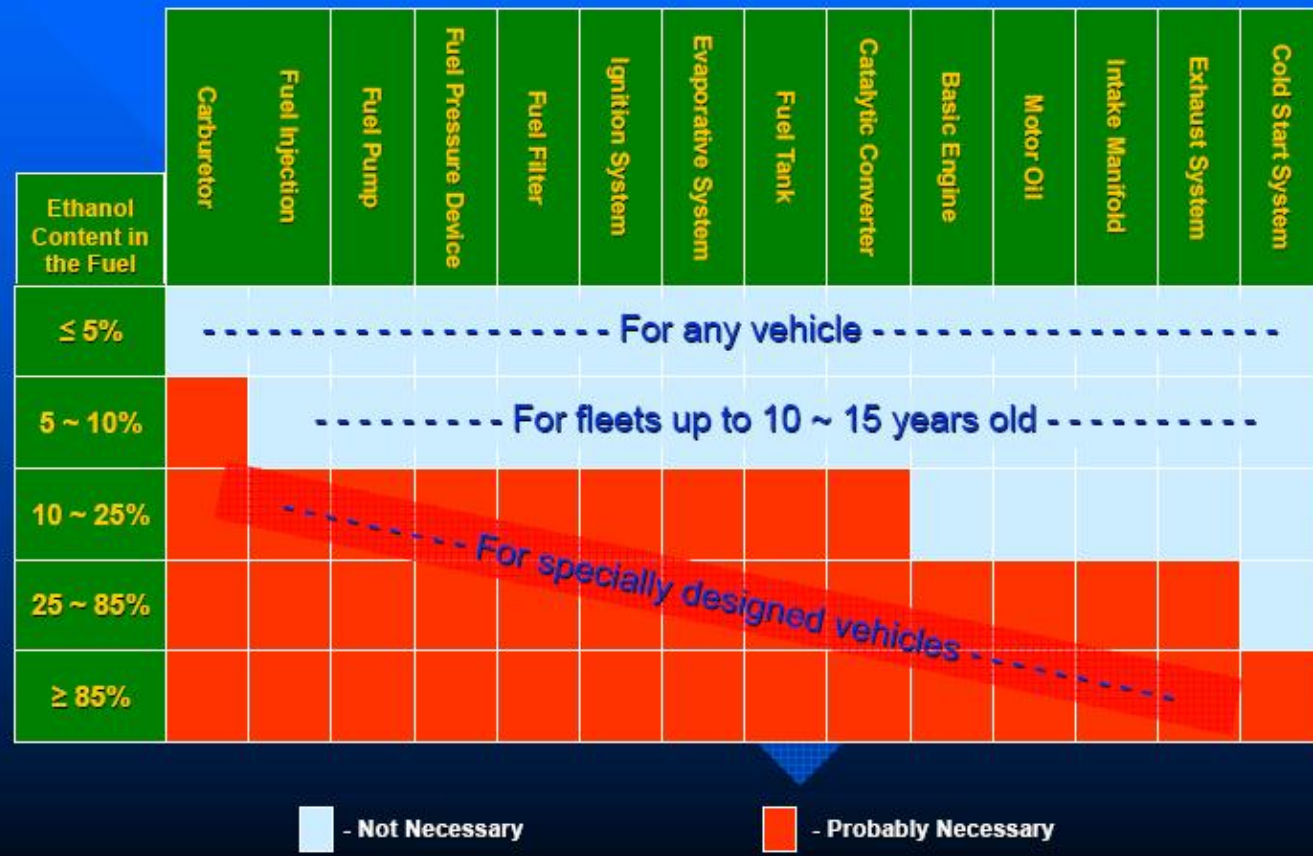
1 - Ethanol

- Programme launch: 1975
- Price liberalisation: 1995
- Introduction of “flex fuel” engine technology: 2003
- Production in 2005: 15,6 million m³
- Domestic demand growth: 1 million m³ / year
- Exports in 2005: 2,6 million m³ (0,9 million m³ in 2002)
- Cost-competitive with oil price at US\$ 30 / barrel



Necessary Modifications

(Otto Cycle Engines)

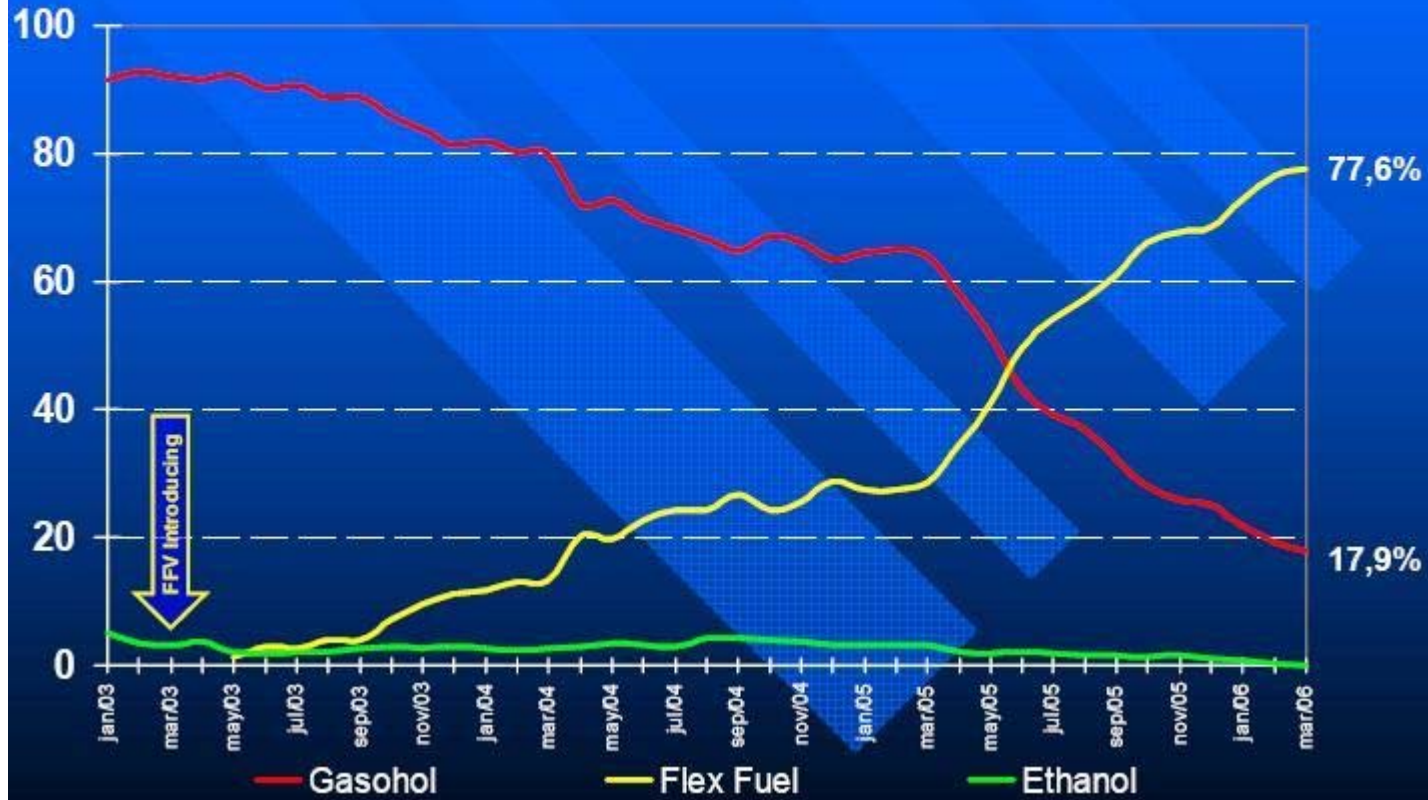


Source: Brazilian Automobile Manufacturers Association – ANFAVEA 2006



FFV Market Share

January 2003 to March 2006



Source: Brazilian Automobile Manufacturers Association – ANFAVEA 2006

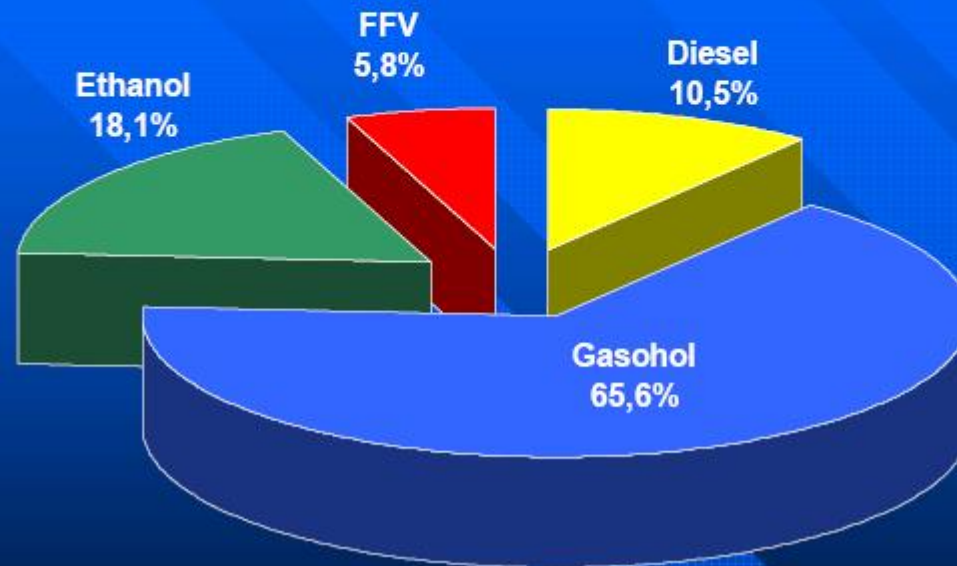
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Light Vehicles in the Brazilian Market

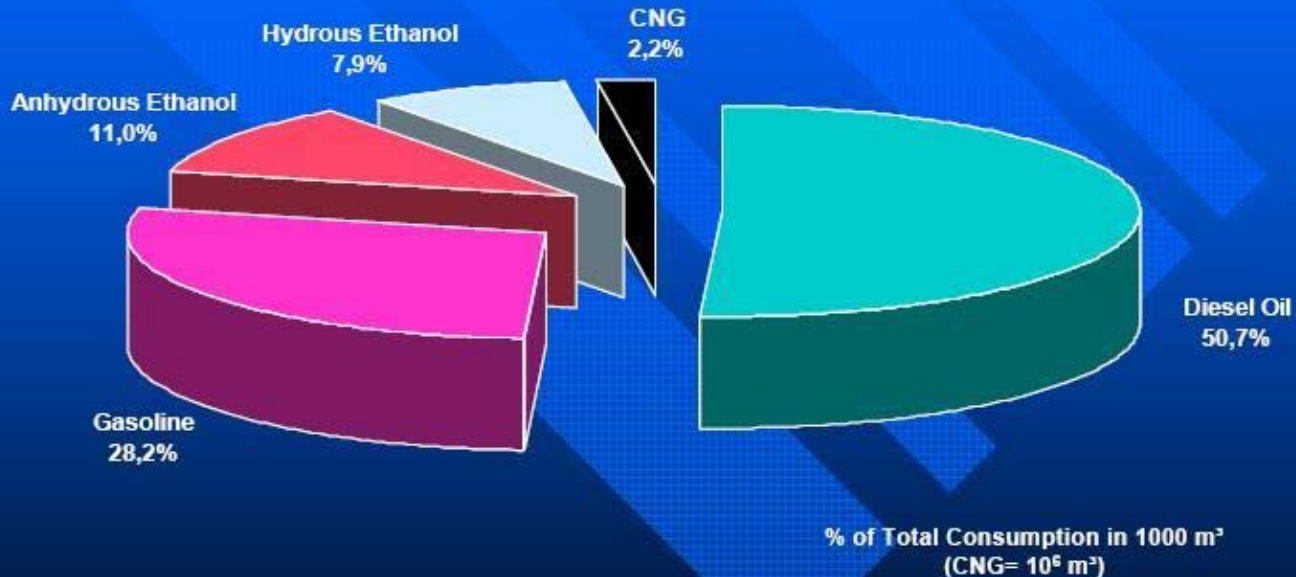
Profile of Brazilian Total Fleet - 2005



Source: Brazilian Automobile Manufacturers Association – ANFAVEA 2006



Brazilian Vehicular Fuel Consumption



Source: Petroleum National Agency of Brazil (2004)

Apud Brazilian Automobile Manufacturers Association – ANFAVEA 2006

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- Renewable/fossil ratio: 8-10 / 1
- Emissions avoided: 33Mt CO₂/y
- Power generation from bagasse: 3GW in the short term
- Planted Area: 5.7M ha - 0,67% of national territory
- Expansion: old pasture areas
- Water: virtually no irrigation
- Formal direct jobs: 800.000



Apud COELHO, S. 2005

Sugarcane and Sugar Beet Production: Global Distribution

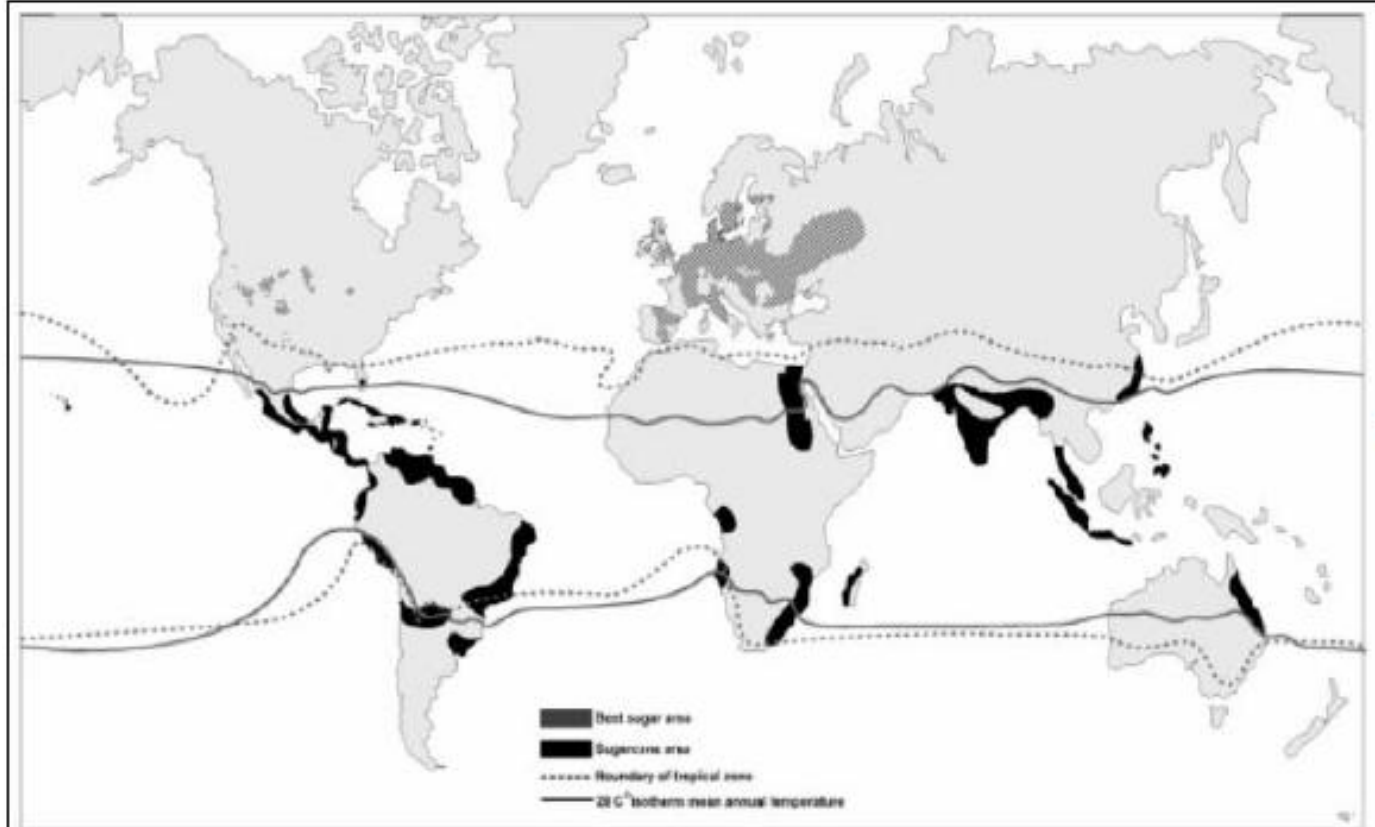


Figure 3.5. Global Distribution of Sugar Beet and Sugarcane Production. Redrawn from Helmut Blume, *Geography of Sugar Cane* (Berlin, 1985), 22.

Apud COELHO, S. 2006

2 - Biodiesel

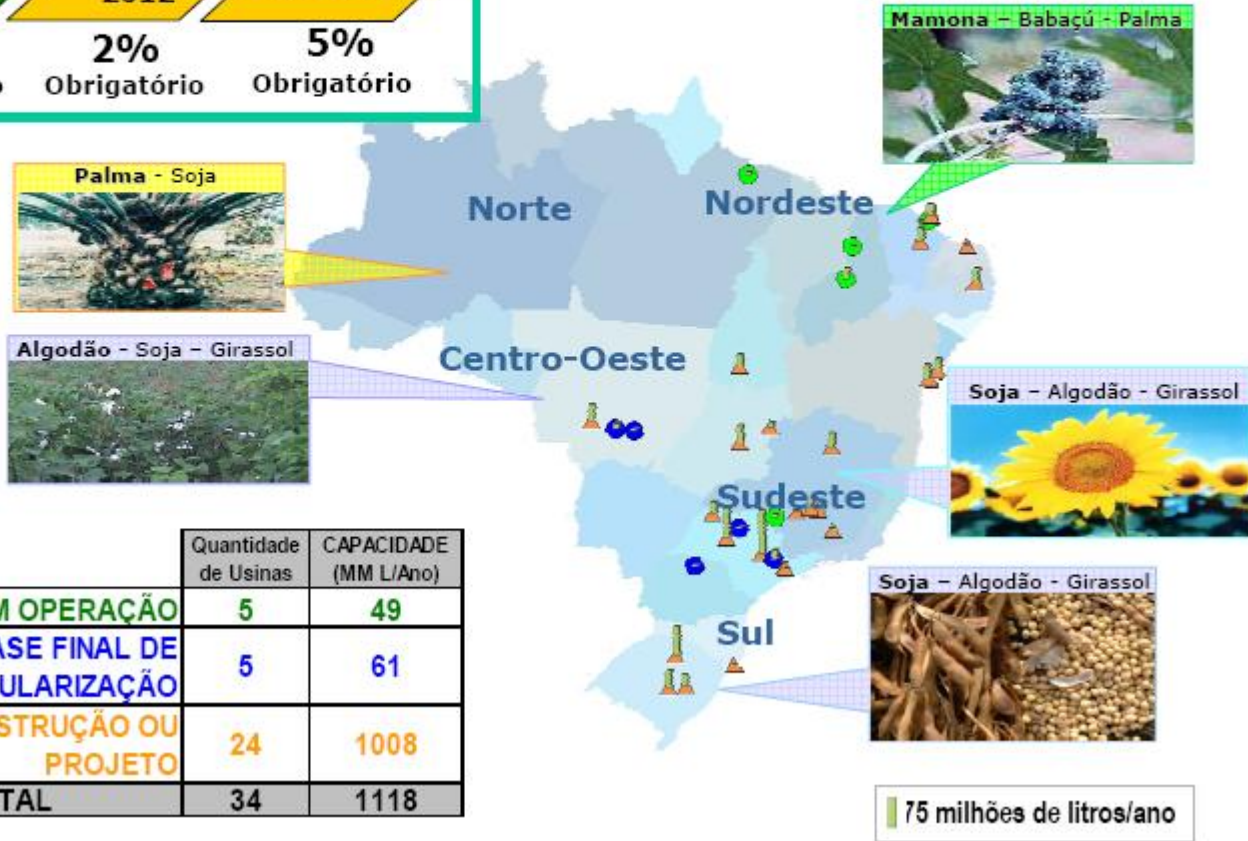
- Programme launch: 2003
- Targets: 2008 – 2% (0,8 million m³); 2013 – 5% (2,5 million m³)
- Current installed capacity: 1,7 million m³
- Current investments: over 200 million euros (participation of French, Italian and Spanish companies)
- Sources: soy; castor seed; jatropha; palm; sunflower; cotton; tallow

- **Transesterification: ethanol (renewable) and methanol**
- **Area (2008 target): 1,5Mha – 0,2% of national territory**
- **Regional distribution: nationwide; focus on semi-arid regions in the Northeast**
- **Employment: 29.000 smallholders in the Northeast**
- **Speculative scenario for 2035: 50 million m³, 20Mha (2,3% of national territory)**

Biodiesel no Brasil



Produtores em Operação e Previstos



Source: Ministry of Mines and Energy 2006

3 – Sustainability Aspects

- **Infant industry**
- **Local environmental dimension: ecosystems, soil, water, local air pollution**
- **Global environmental dimension: greenhouse gas emission reductions**
- **Social dimension: rural development, income generation**
- **Economic dimension: diversification and stability of supply, multiplying effects**

4 – Conclusions

- **Potential for significant environmental gains**
- **Diversification and stability of supply**
- **Opportunities for developed and developing countries**
- **New paradigm for international cooperation**

Thank you

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