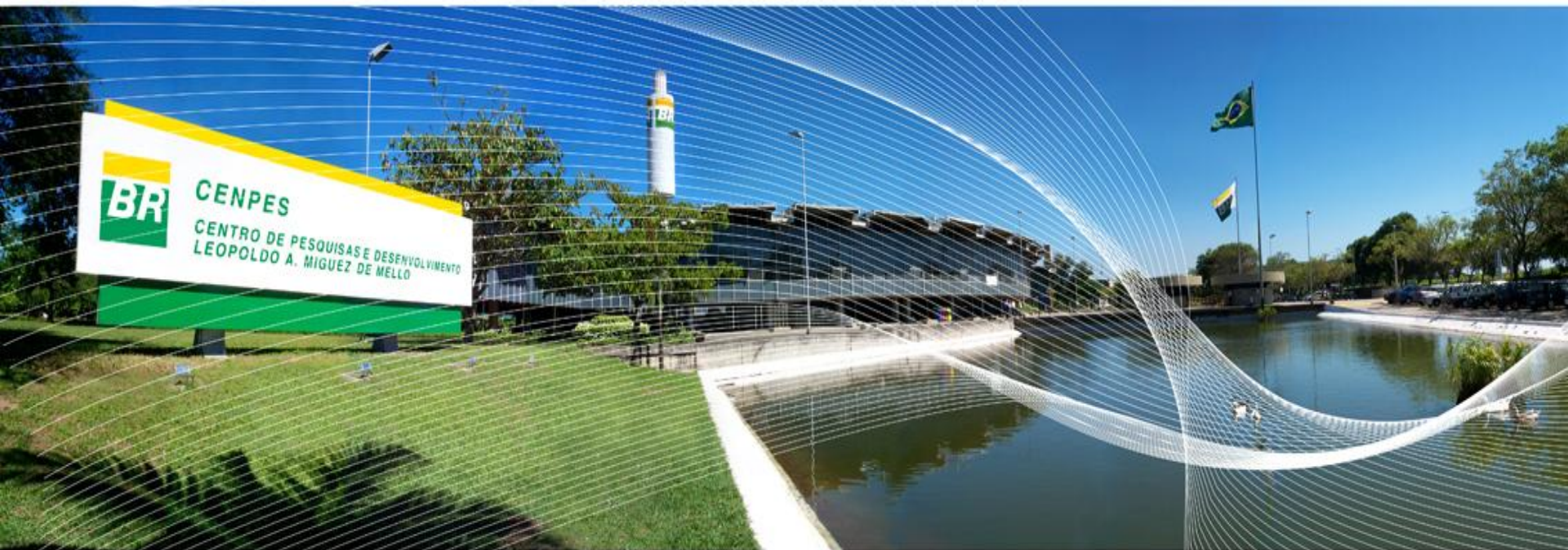




PETROBRAS

Cenpes
Research and
Development Center



Biofuels in Petrobras

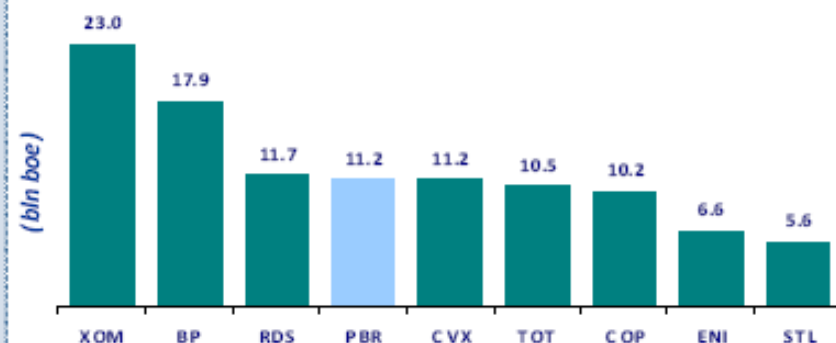
Petrobras figures in the world - 27 countries

Áreas	Quantity
Market value - august/2009	\$ 173,59 billion
Service stations	more than 8,000
Employees - june/2009	75,242
Production platforms	112
Thermoelectric plants	10
Refinery	16
Average oil & natural gas production - june/2009	2,505,379 barrels/day
Investment in biofuels – 2009/2013	\$2.8 billion

Operates 23% offshore E&P worldwide

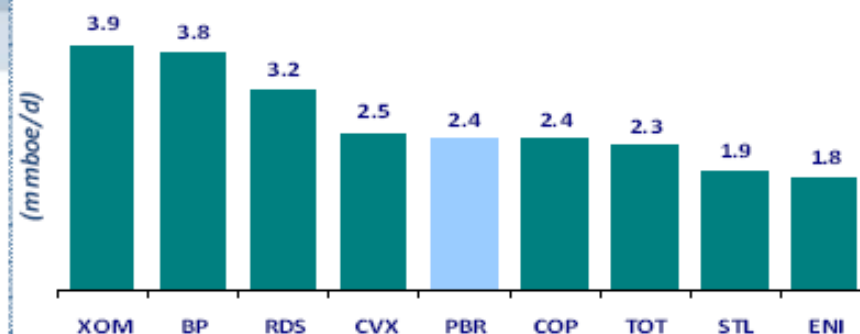
A WORLD-CLASS, PUBLIC, INTEGRATED ENERGY COMPANY

2008 Proven Reserves (SEC)



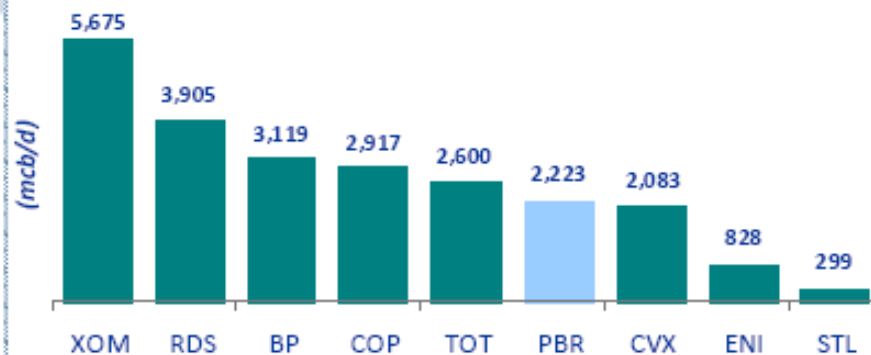
Source: Evaluate Energy and Company reports

2008 Oil & Gas Production

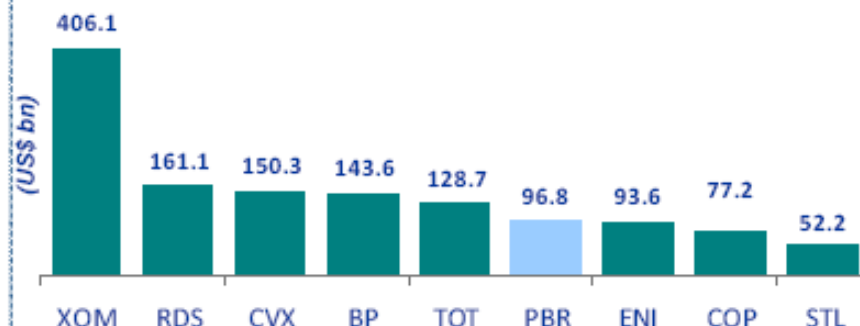


Source: Evaluate Energy and Company reports

2008 Refining Capacity

Source: PFC Energy WRMS
(barrels per calendar day, considering company % shareholding and including JVs)

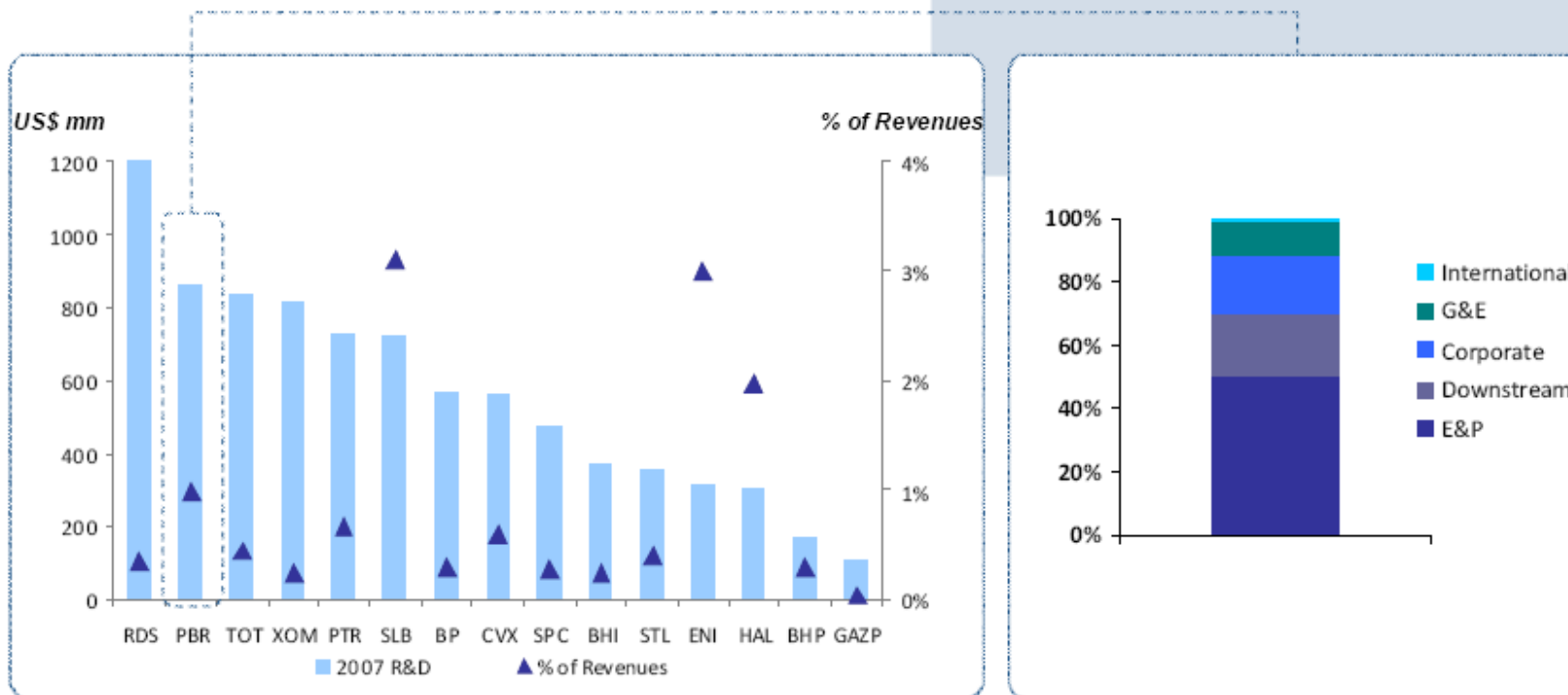
Market Value as of December 31, 2008



Source: Bloomberg

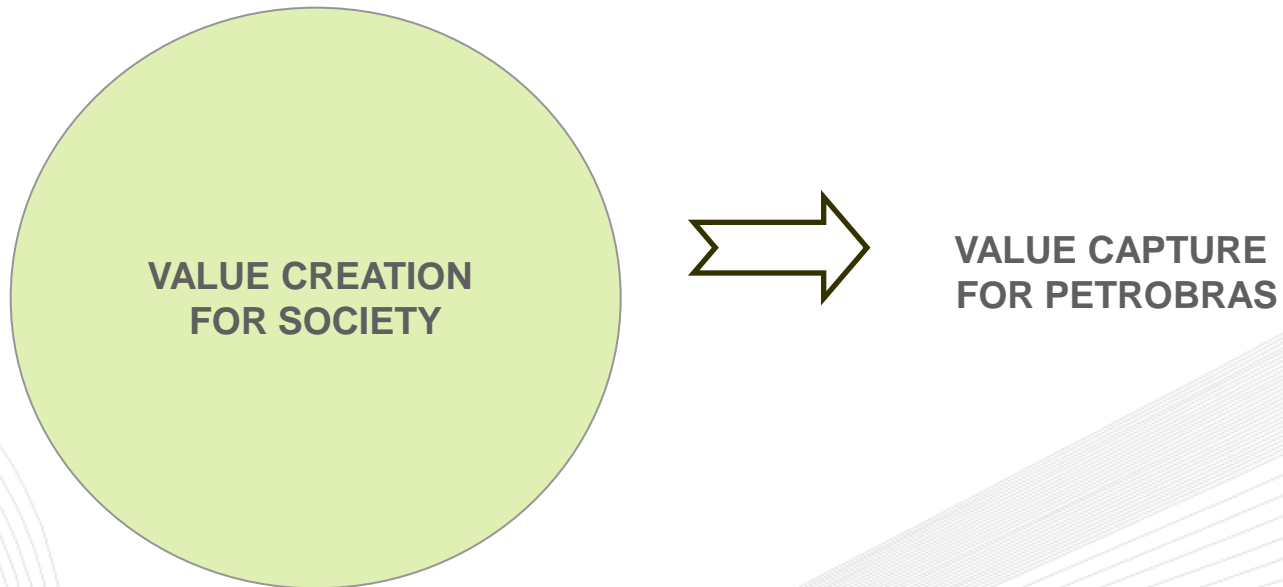
A CONTINUED COMMITMENT TO R&D...

Top 10 2007 R&D Spenders in the Energy Sector



Extensive partnerships: over 100 worldwide institutions

THE COMMITMENT TO SUSTAINABLE DEVELOPMENT IS EMBEDDED IN PETROBRAS STRATEGY



Significant social and environmental portfolio

Important feature in decision making

E&P

Downstream
(RTC)

Distribution

Gas & Energy

Petrochemicals

Biofuels

Strong belief in renewables, and in particular biofuels, as a path to sustainable growth.

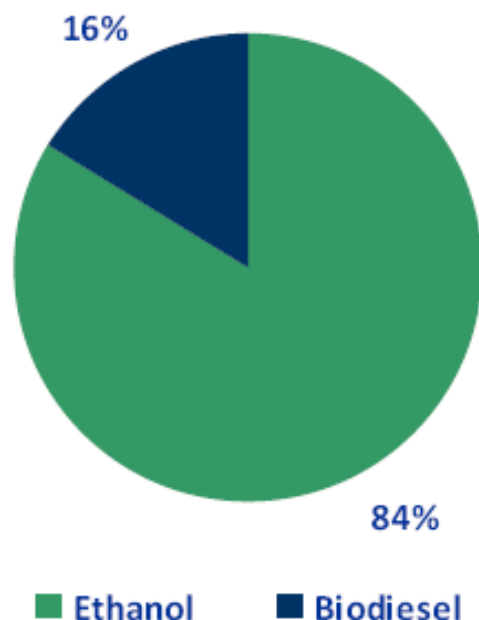
Brazil has distinctive experience and capabilities for biofuels. Petrobras' strategy includes sustainability criteria resulting in biofuels with strong economic, social and environmental benefits.

With a transparent and sound business model, benefits of biofuels can be maximized while potential undesirable side effects can be controlled. Some aspects:

- Non food or excess production feedstocks**
- Degraded land**
- Family agriculture partners**
- Productivity measures**
- Ecoefficiency**
- Biofuels from residual biomass**

GROWING OPTIONS IN BIOFUELS AND LOW-CARBON TECHNOLOGIES...

Biofuels Investments
US\$ 2.8 billion

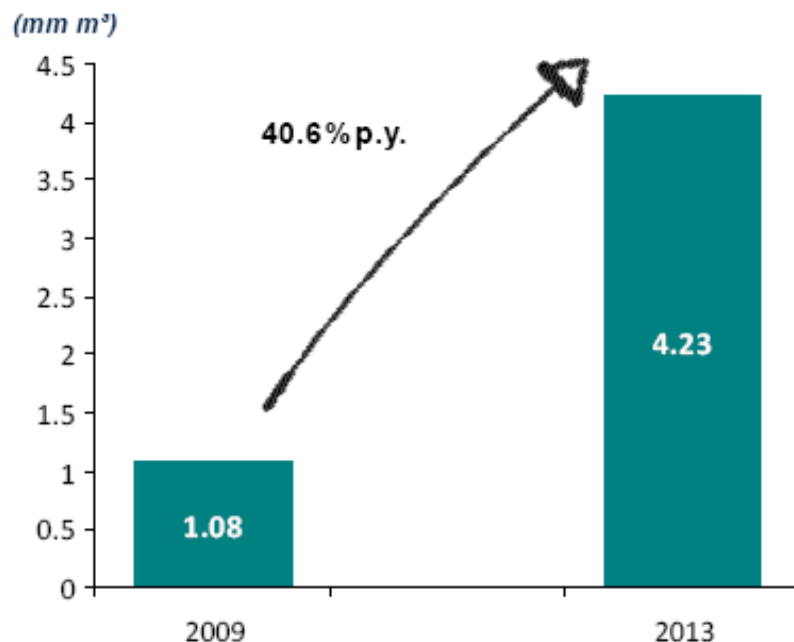


STRATEGY: To establish a global presence in the biofuels segment, with a particular focus on biodiesel and ethanol

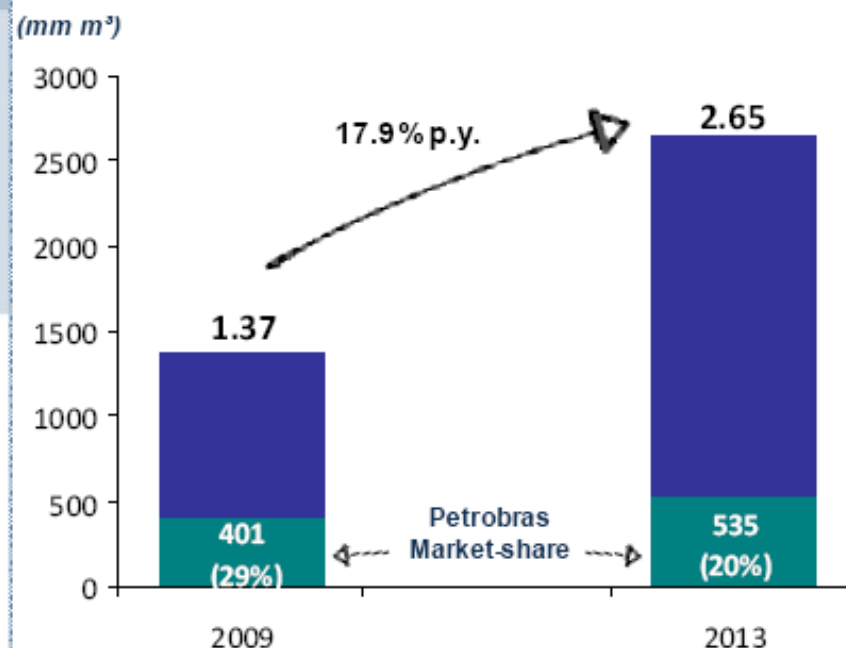
- Participate in Brazilian ethanol chain and develop global markets for Brazilian ethanol
- Participate sustainably in the biodiesel business in Brazil and with selective international investments
- Develop competitive technologies to produce biofuels from residual biomass

WHICH CONTINUE TO INCREASE IN IMPORTANCE

Ethanol Exports



Brazilian Biodiesel Market and Petrobras Production Target*



PETROBRAS biofuels

- in the middle of 2008 it was created PETROBRAS BIOFUELS, a subsidiary of PETROBRAS, specifically for biofuels;
 - PETROBRAS BIOFUELS has three biodiesel plants located in Northeast region and Brazilian semiarid, with total capacity of 171,000 m³/yr
 - Strong activity in partnerships – national and international

R&D on biofuels is developed by
PETROBRAS R&D Center, located
in Rio de Janeiro

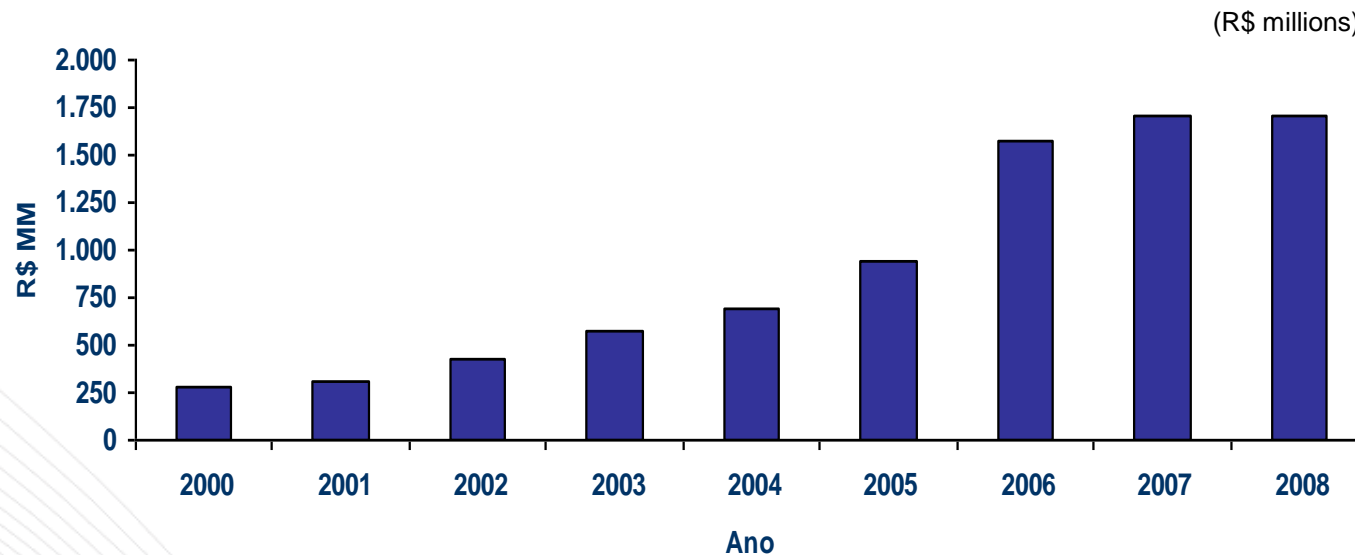
2009-2013 budget: US\$ 530 Million



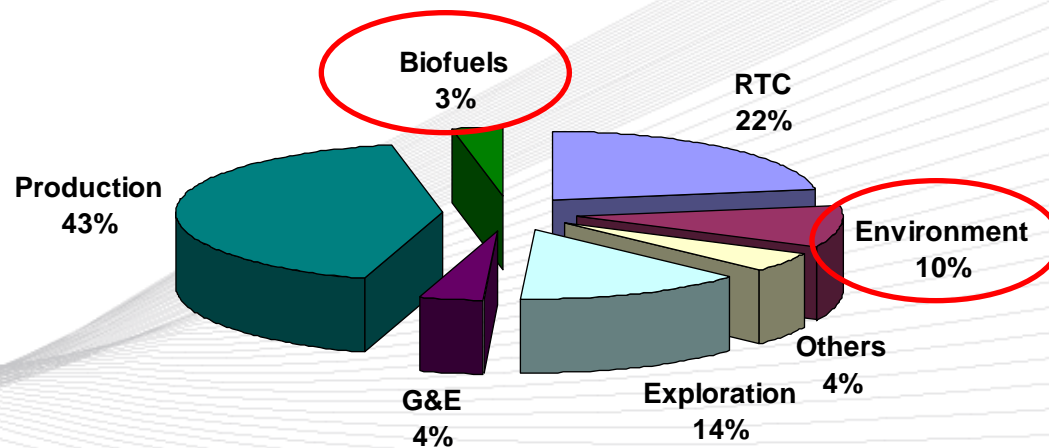
Biofuels technological strategy



R&D EXPENDITURES



Period: 2006-2008



Life Cycle Assessment

- Comprehensive project involving detailed assessment of every step of Petrobras biofuels
- Based on real measured data
- Considers ILUC fully
- Directs sustainability policies and investments



Feedstock



PETROBRAS

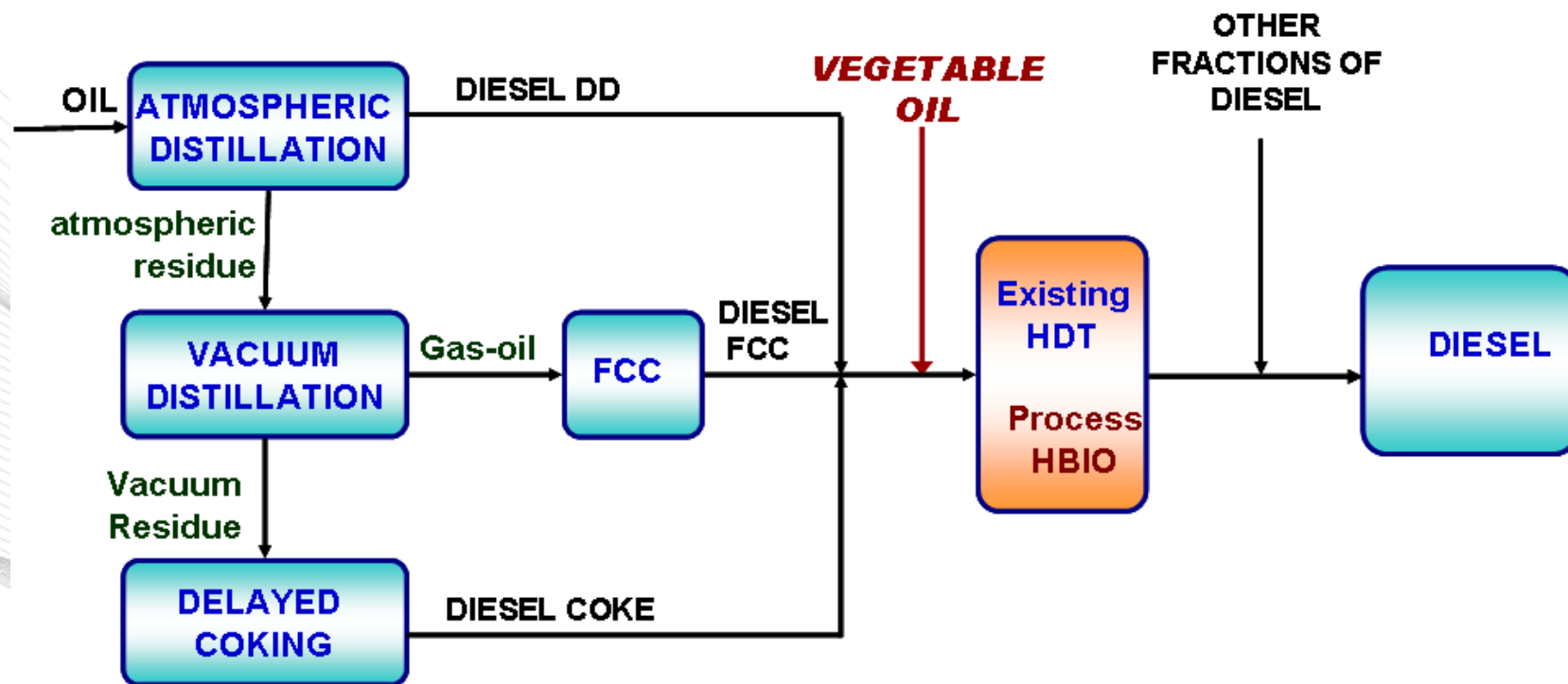
Cenpes
Research and
Development Center

- Varios R&D projects to Improve productivity and sustainability
- Crops suitable for semiarid
- Non food feedstocks and excess production
- Use of degraded land
- Microalgae



Current status:

- ★ Industrial tests carried out in refineries
- ★ Patent applications filed
- ★ Investments in 5 refineries



Biodiesel



PETROBRAS

Cenpes
Research and
Development Center

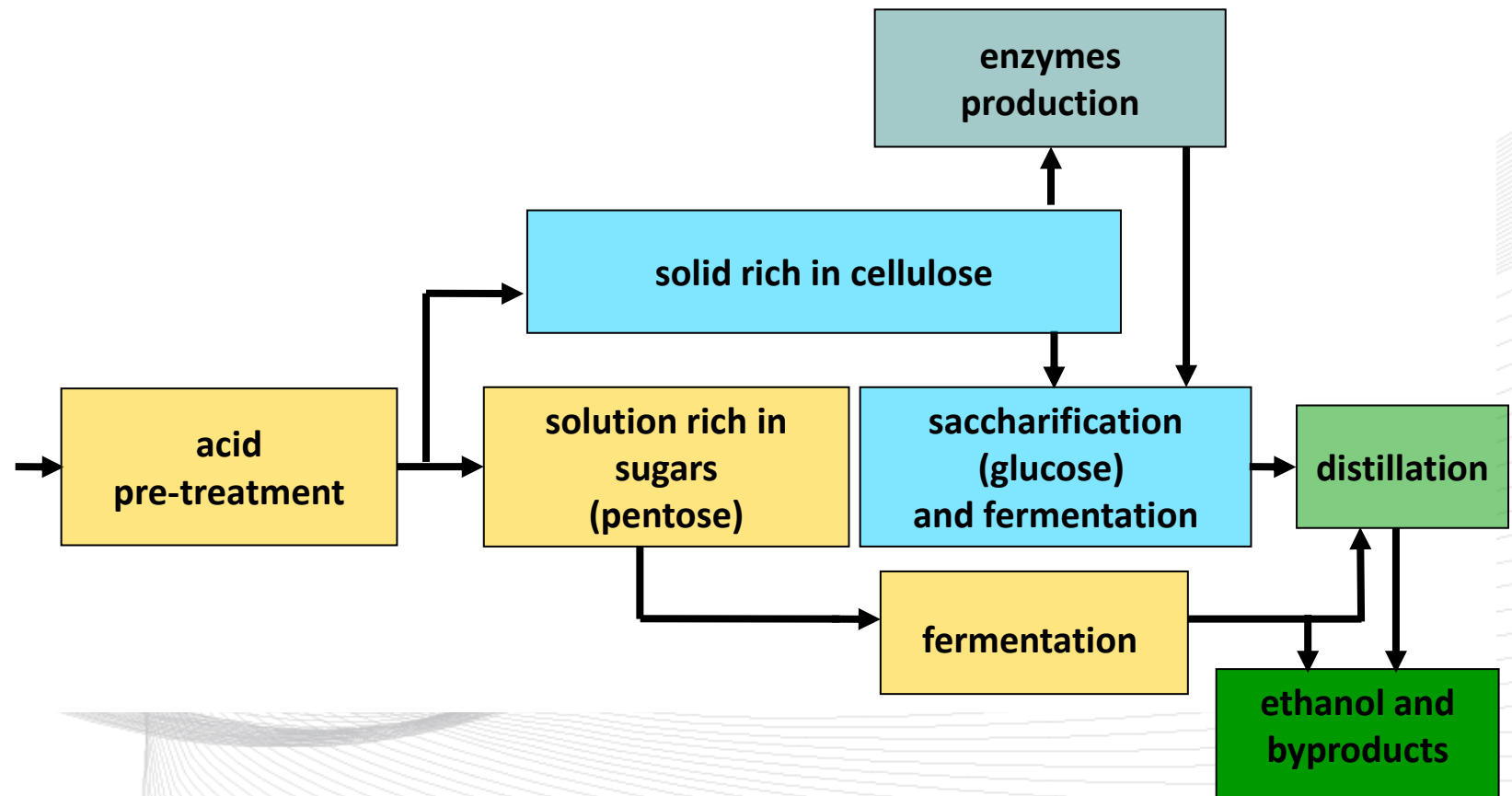
PETROBRAS technology

- raw materials
 - soybean + castor oil
- successful lab experiments (2004)
- successful pilot-plant tests (2004)
- demonstration batch plant on stream since 1st Q 2005
 - capacity: 200 t/yr
 - upgrade to continuous process 6,000 t/yr (on start up)
- 1st high capacity design concluded 4th Q 2008



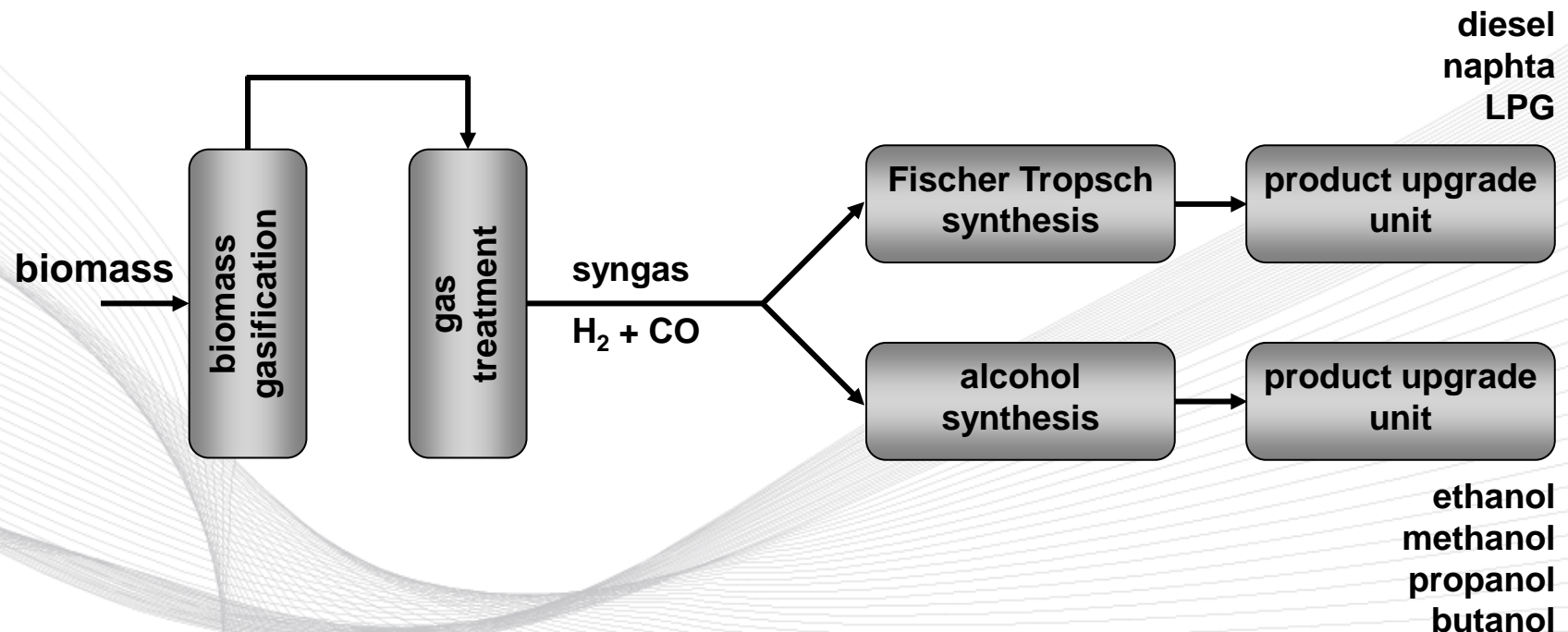
Cellulosic ethanol

- pilot plant on stream since the 1st Q 2008;
- demonstration plant's basic design under development (2010):



Biomass to liquid

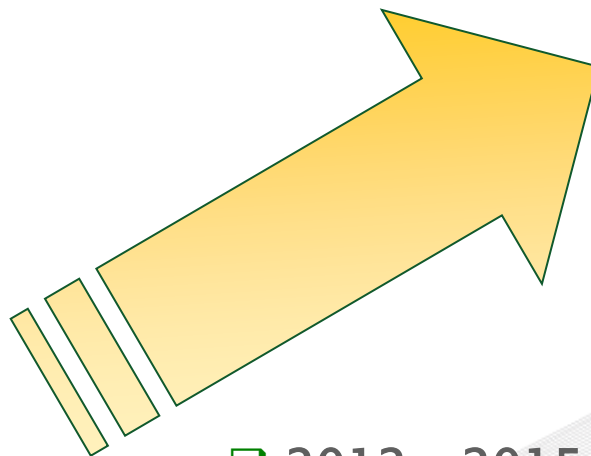
- Significant research on BTL since 2006
- BTG pilot plant start up scheduled to 2011;
- Fischer Tropsch GTL pilot plant start up scheduled to 2011;
- syngas to ethanol \Rightarrow under study



Biofuels: we are convinced

□ 2009

✓ Proven benefits



□ 2012 – 2015

✓ BTL and Bio-oil

✓ Cellulosic Ethanol

✓ Deployment of Biorefinery concept



Thank you!

