



**CENTRO DE ESTUDOS
DO DIREITO PÚBLICO E REGULAÇÃO
Coimbra, 6 de Abril 2001**

II Painel - A Energia em Portugal

O Gás Natural

António Mexia

Presidente Executivo Galp Energia



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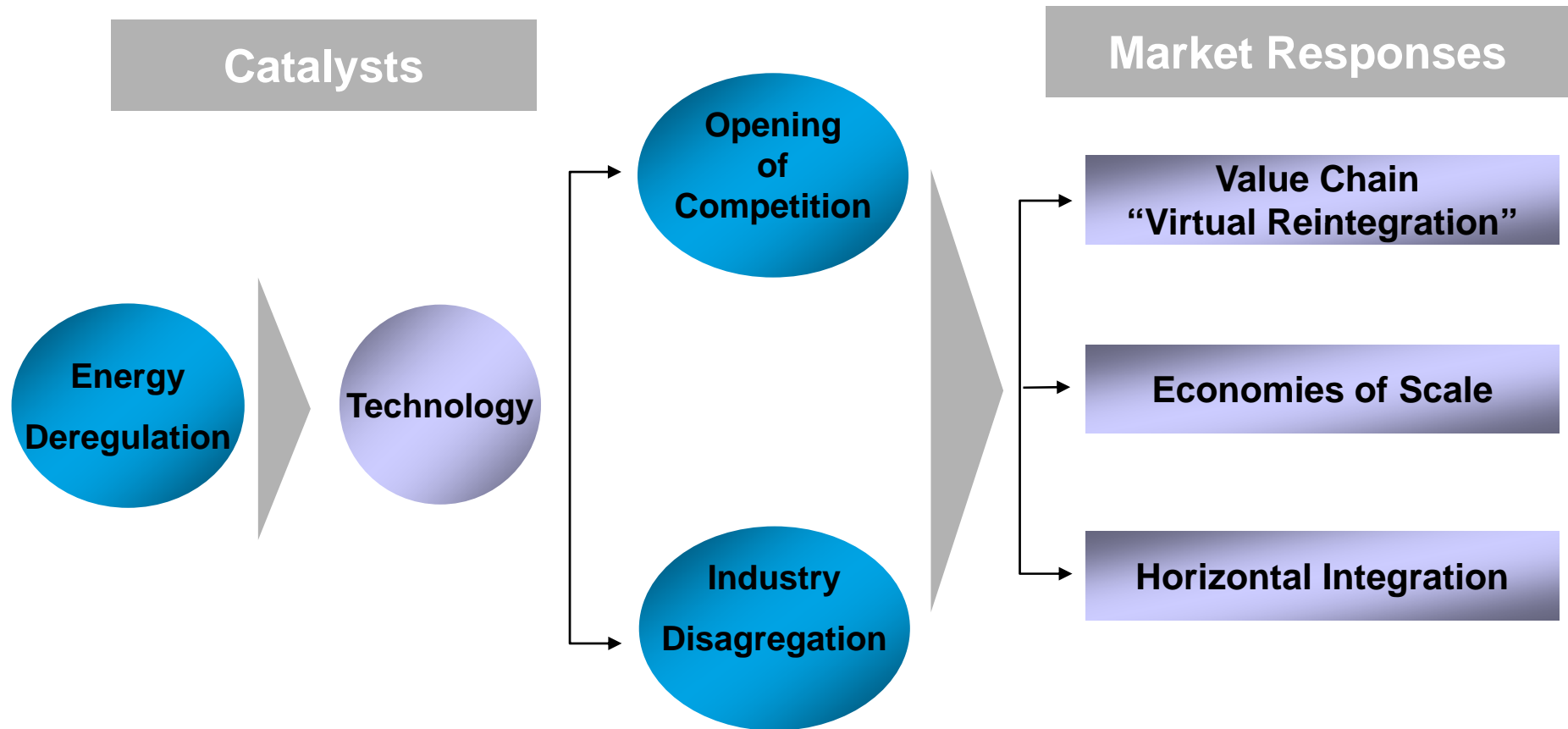
New Trends

European Market uniqueness

Portuguese context

Energy: Key Drivers of Change

Initiated by Government, Driven by Technology, Optimized by the Market



Gas: New Business Models

1. Increasing importance of Gas-to-Power

+/-60% of power commissioned up to 2010 will be gas-fired

40-50% of power produced from gas in 2020

2. Local Generation Growth

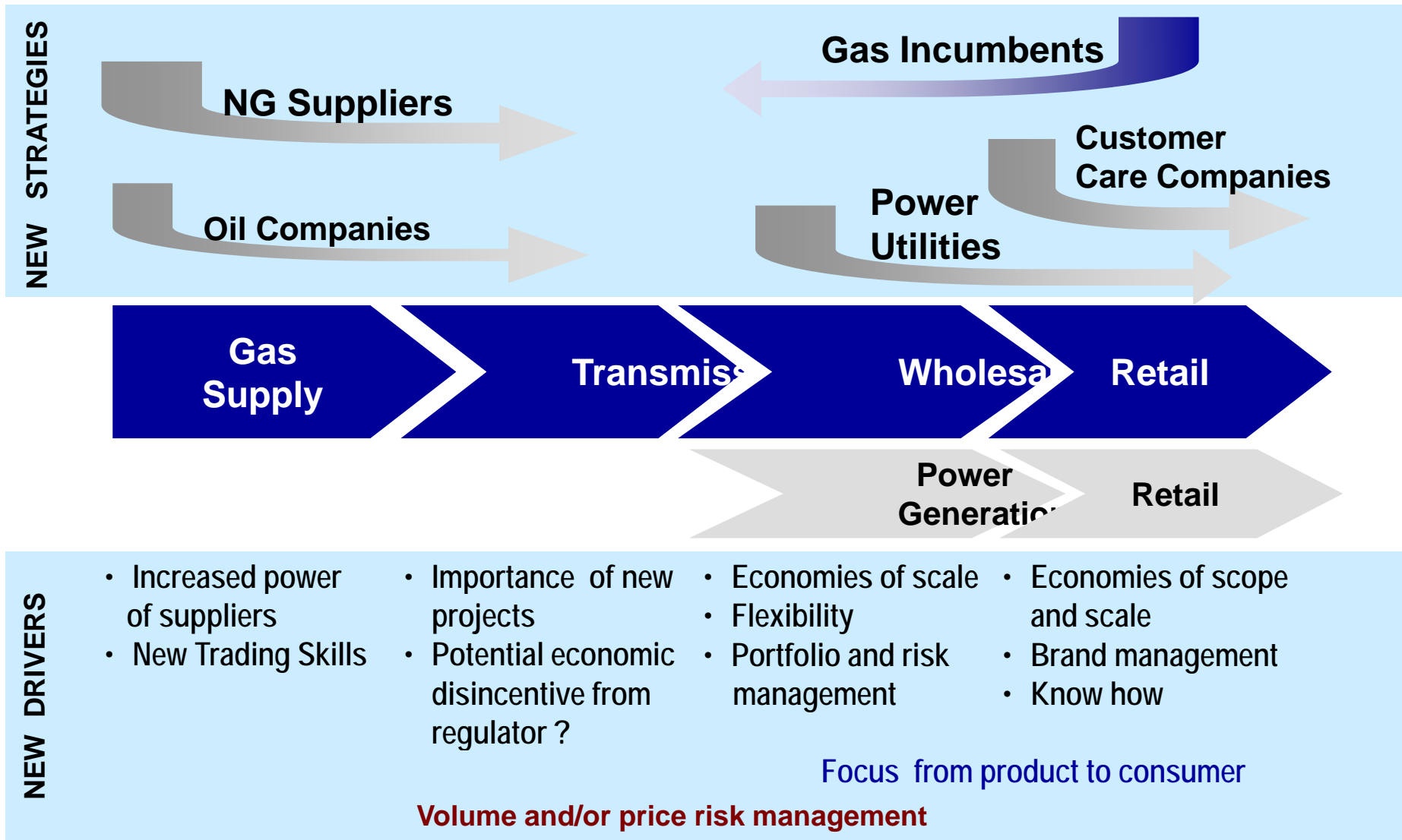
Target of 18% for cogen by 2010

3. Transmission Bypass



**Increased importance of Supply
and of the
Transportation Grid**

Value Chain: new strategies, new drivers and new players





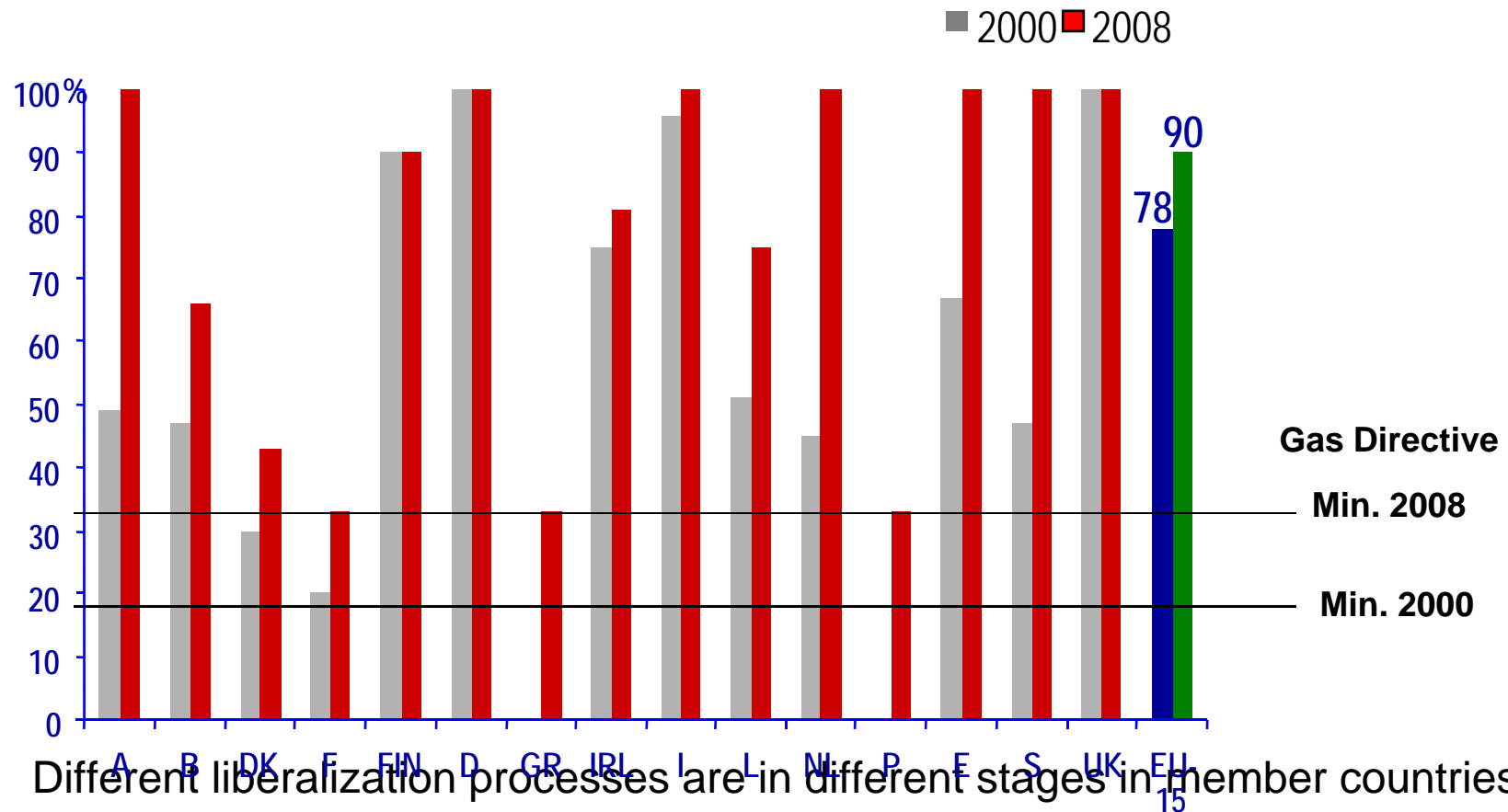
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New Trends

European Market uniqueness

Portugal in Iberia

Europe: Liberalization at different stages



- Different market stages (emerging vs mature)
- Physical barriers (Iberia, Greece)

Europe: Still a non integrated market

NG Trades among EU countries still limited

- about 42 bcm in 1998
- 12% of total EU15 consumption
- 2/3 are sales from Holland to Germany and France

A European NG integrated system could add flexibility to the markets

- allowing operators to sell excess NG
- giving them the chance to face sudden unexpected demand
- the liberalization will help to increase inter-European trades, but...

... such system requires infrastructure investment

- there are several regional areas isolated or facing severe constraints
- investing in high pressure pipelines network requires adequate tariff system

Europe: An unbalanced market

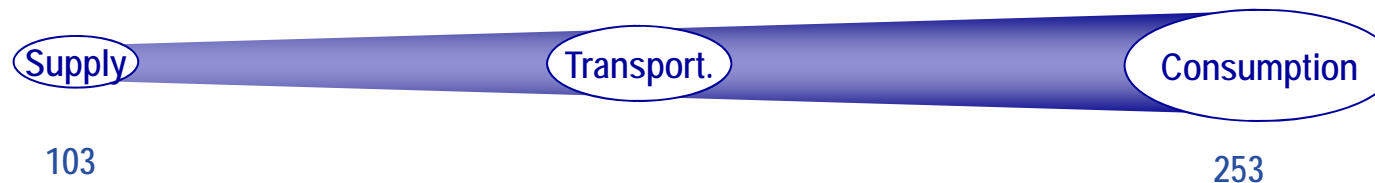
North America (incl. Mexico) - balanced



United Kingdom - balanced ...for now



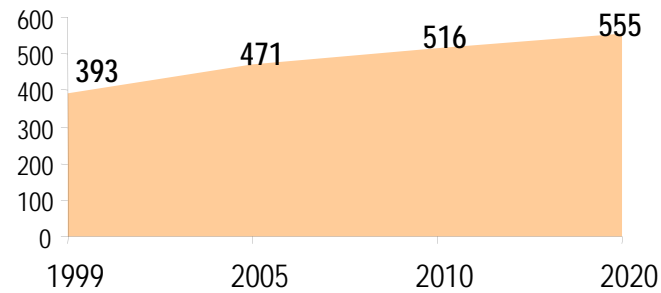
EU15 (excl. UK) - dependent



Europe: Dependence will grow

1 Consumption will continue to grow, while...

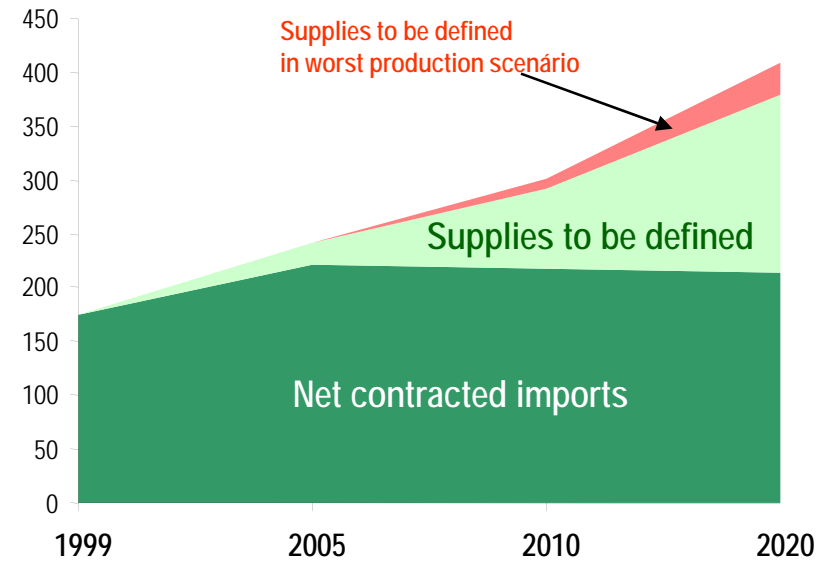
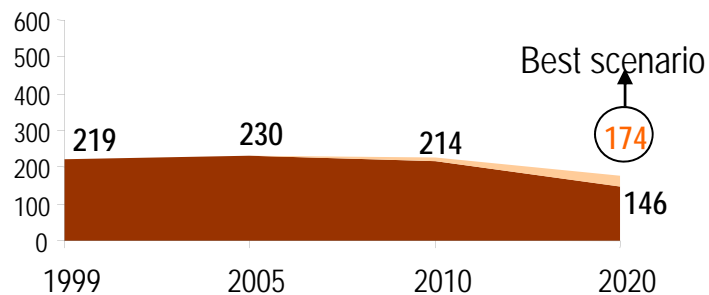
EU15 NG demand (bcm)



+

2 ... internal production will decline

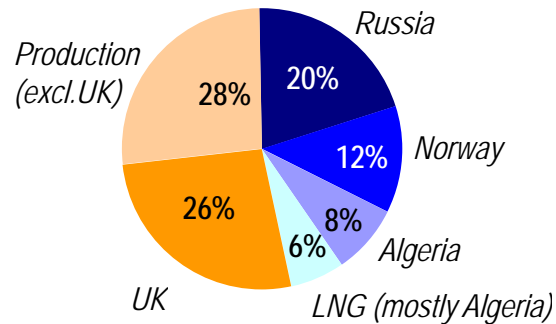
EU15 NG production (bcm)



3 From 45% to 68%-74% of dependence

Europe: Dependent from few suppliers

Actual Sources



New Sources

New sources of NG

- LNG (Nigeria, Russia, Algeria, Libya, Middle East,...)
- Pipeline NG - basically today' suppliers

Increasing dependence of few suppliers

The issue is as much on country as on company power

LNG will play an increasing role...

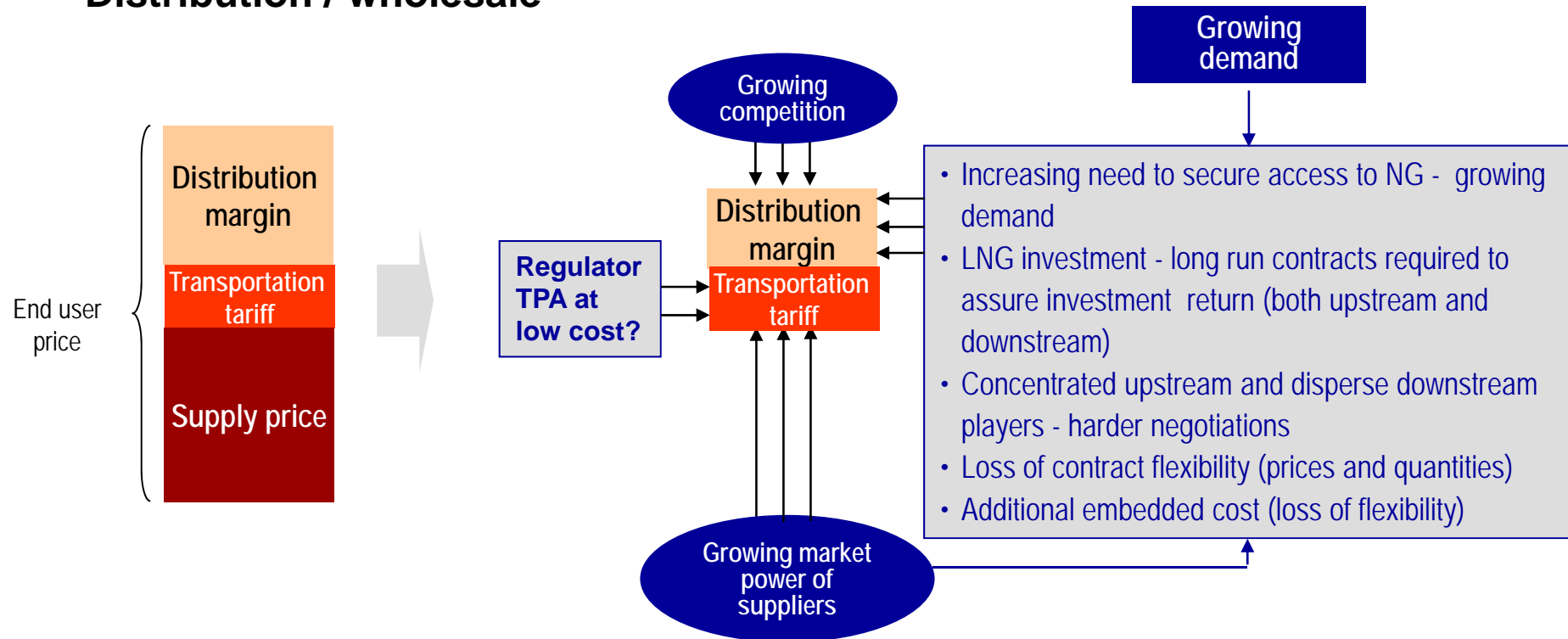
- 1998 LNG consumption was about 20 bcm (50% of which by France)
- New investments in re-gasification capacity projected or under construction reached 26 bcm (excluding France, Ireland and Holland)

... but only slightly reduces supplier dependence

- LNG will hardly represent more than 20% of EU consumption (spot LNG even less)
- Requires tight long run commitments from buyer

Liberalization: lower margins ... and supply pressure

Distribution / wholesale



Double pressure on margins

...while additional risks are being supported

- market risk and insufficiently flexible supply contracts
- margin risk - gap between supply prices (oil linked) and end user competitive limitations

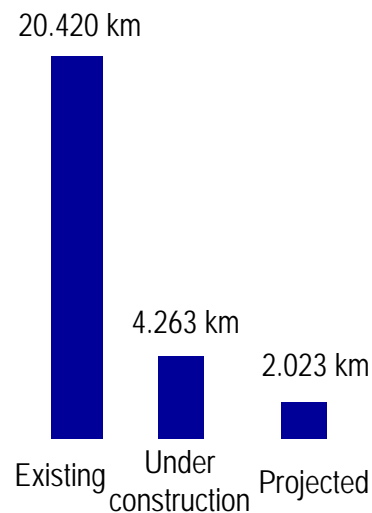
Typical effects of liberalization processes reinforced by supply conditions

Transmission: the need for the right incentives

Are there incentives for pipeline investments in the short run?

- Cash flow is shrinking and so is investment capacity
- Priorities are to reduce supply dependence and to face growing demand (upstream, storage, LNG re-gasification)
- Return on transportation investment depends on TPA model and tariffs

Pipeline Investment in EU15



Source: EU Commission, 1998
Excludes France, Ireland and Holland

Long term vs short term transportation equilibrium

	Short term	Long term
TPA based on investment return	<ul style="list-style-type: none"> • Investment in transportation is guaranteed from the start 	
TPA based on depreciated infrastructure O&M costs	<ul style="list-style-type: none"> • Lack of transportation investment • Transition period with transportation constraints 	<ul style="list-style-type: none"> • Sharp rise in transportation tariffs to meet urgent investment needs • Additional pressure on distribution margins and/or end user price rise

European Gas Market: Issues to address

- **What incentives are there for putting in place the required infrastructure?**
 - TPA tariffs are adequate to incentive pipeline investments?
 - What is the long run effect of today' transportation tariffs?
- **How to coordinate the need to access NG with increasing competition for end user market?**
 - How to assure more flexibility and shorter term contracts with higher power from suppliers?
 - How to avoid the effects of Integration?
- **What about supply flexibility?**
 - How to share the potential cost of lack of flexibility (long run/short run)?
- **Of course margins will decrease. But what will happen to prices?**
 - Will distribution margin be transferred to supply and, in the long run, to transportation companies?
 - Will the end user prices be penalized for the potential lack of flexibility in supply contracts?



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Portugal Gas Market

LDCs covering more than 90% of population

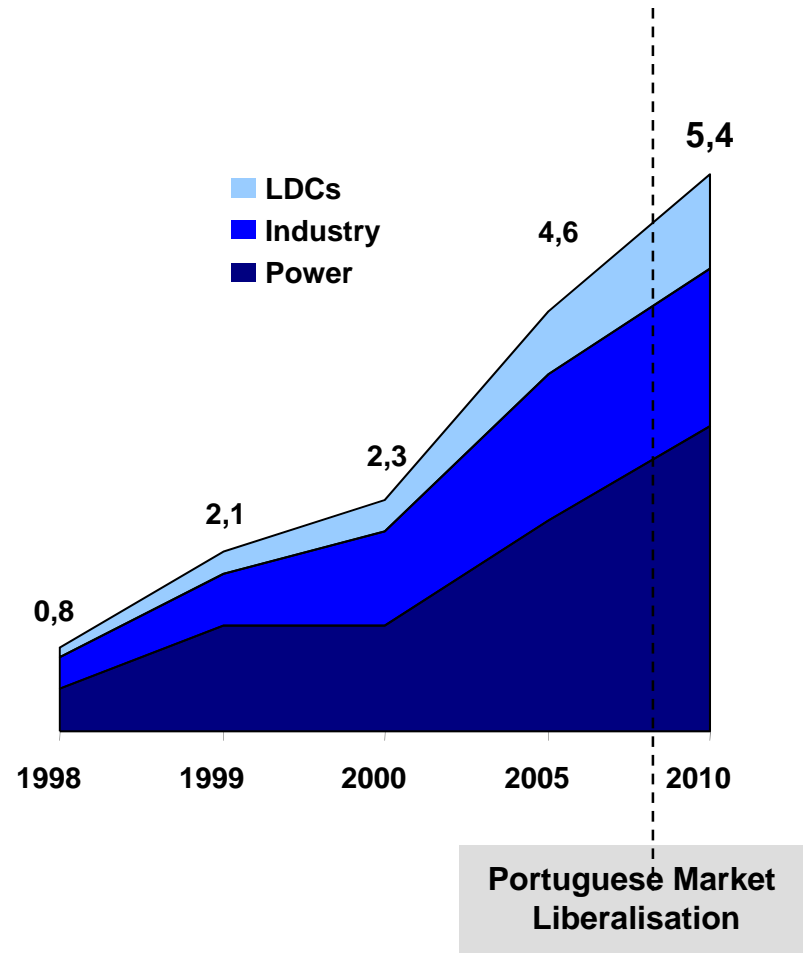
Underground storage (min. 4x90 Mcm)

10.000 Km of network - 2010

1 LNG terminal (min.2,4 Bcm) by2003

13 Satellite Supply Units

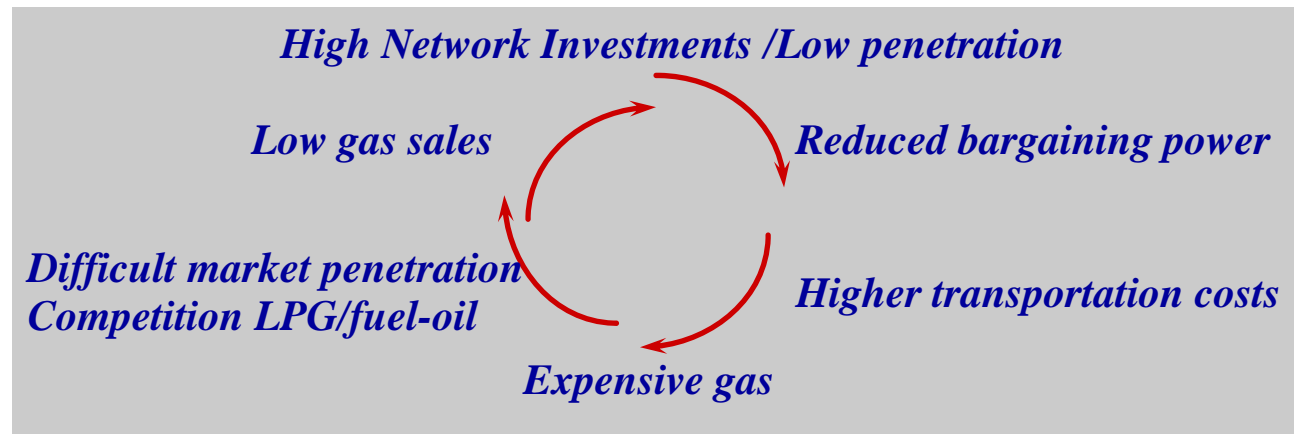
Backbone in place and a fast build up... but still just half way there



The Natural Gas industry in Portugal

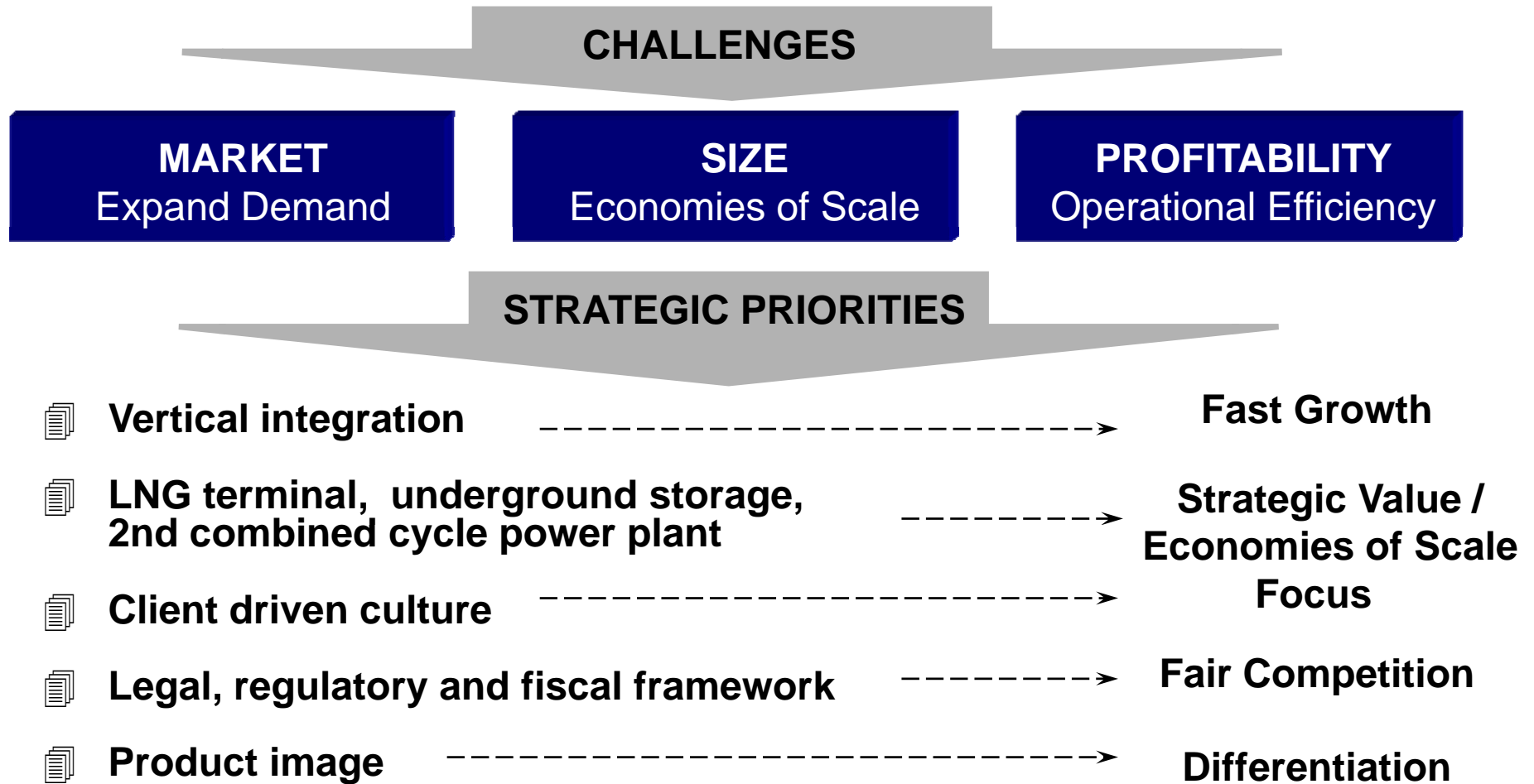
- Start-up organisation chosen for the natural gas industry in Portugal ignored the size of the market
- Excess number of domestic and international players involved resulting in a clear lack of a global strategy

Potential Vicious Circle



The need for a sharper build up with new model

The Natural Gas industry in Portugal - present & future



A new strategy for growth

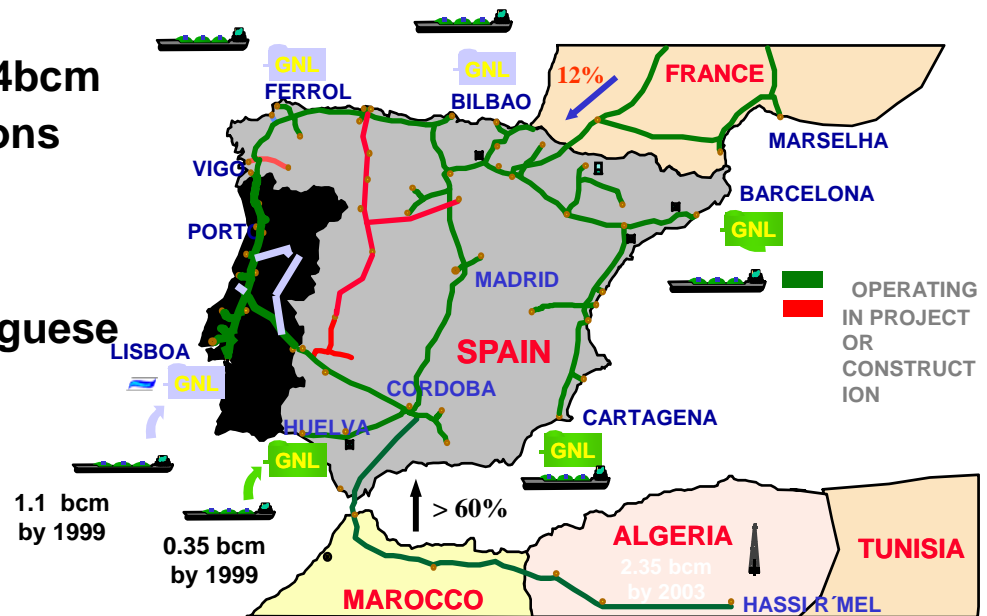
Supply

(December 1998)

- Current source via Maghreb pipeline from Algeria
- LNG Terminal completed by 2003
 - base regasification capacity of 2.4bcm
 - no constraints in further expansions



- ☞ Increases strategic value of the Portuguese system in the Iberian context
- ☞ Creates additional flexibility and negotiating power

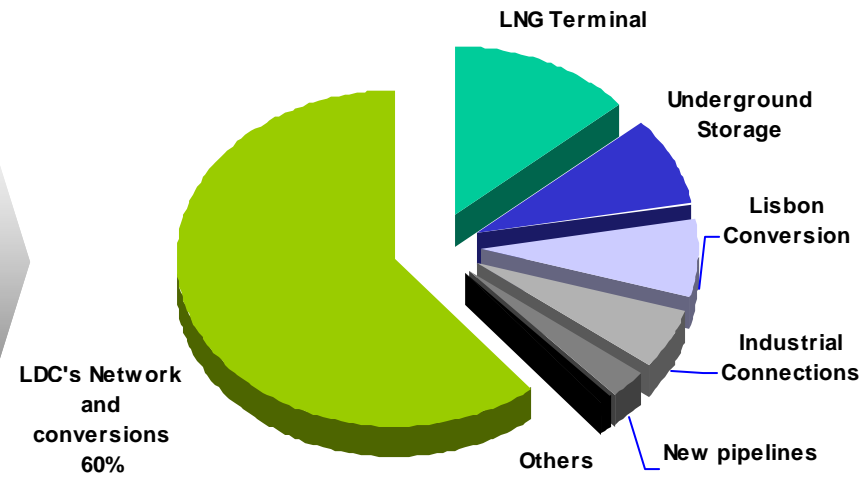
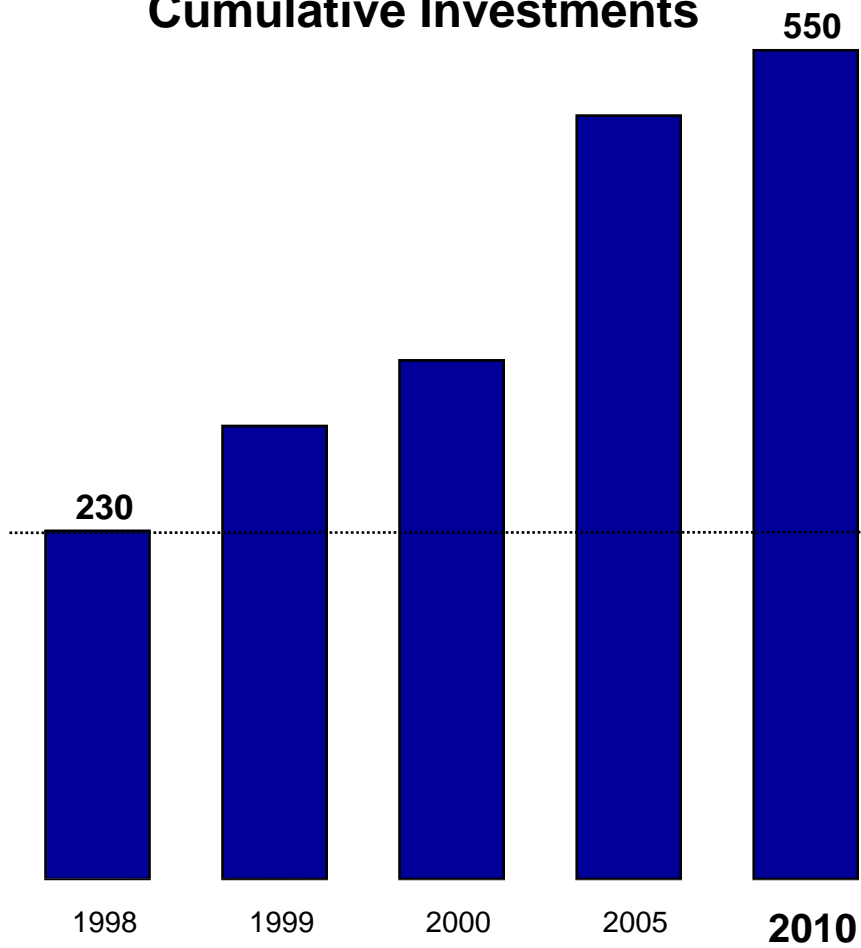


50/50 target PipeGas / LNG mix by 2010

Important location premium over LNG imports and privileged access to the Peninsula

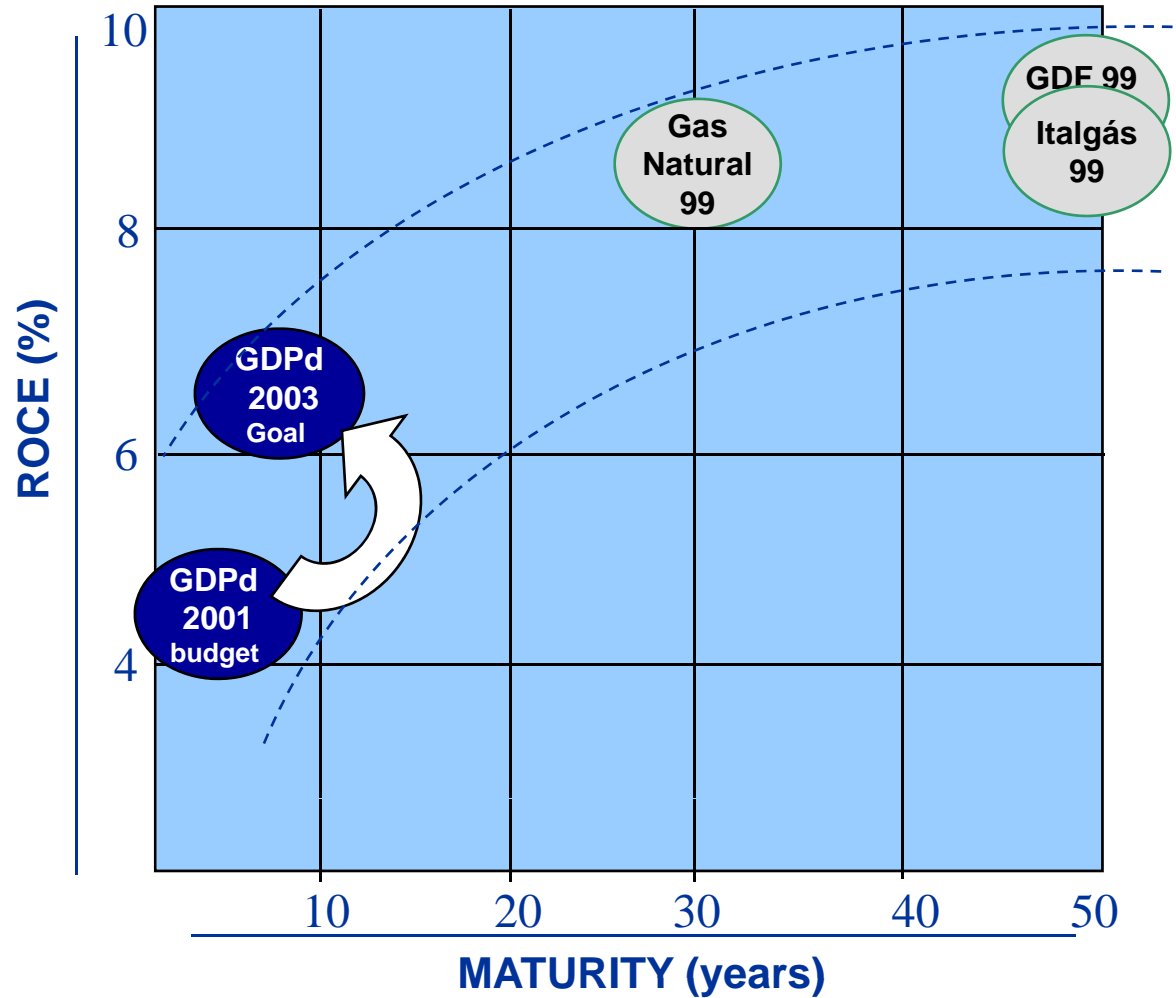
Investment Programme

Cumulative Investments



Significant investments in network and strategic assets

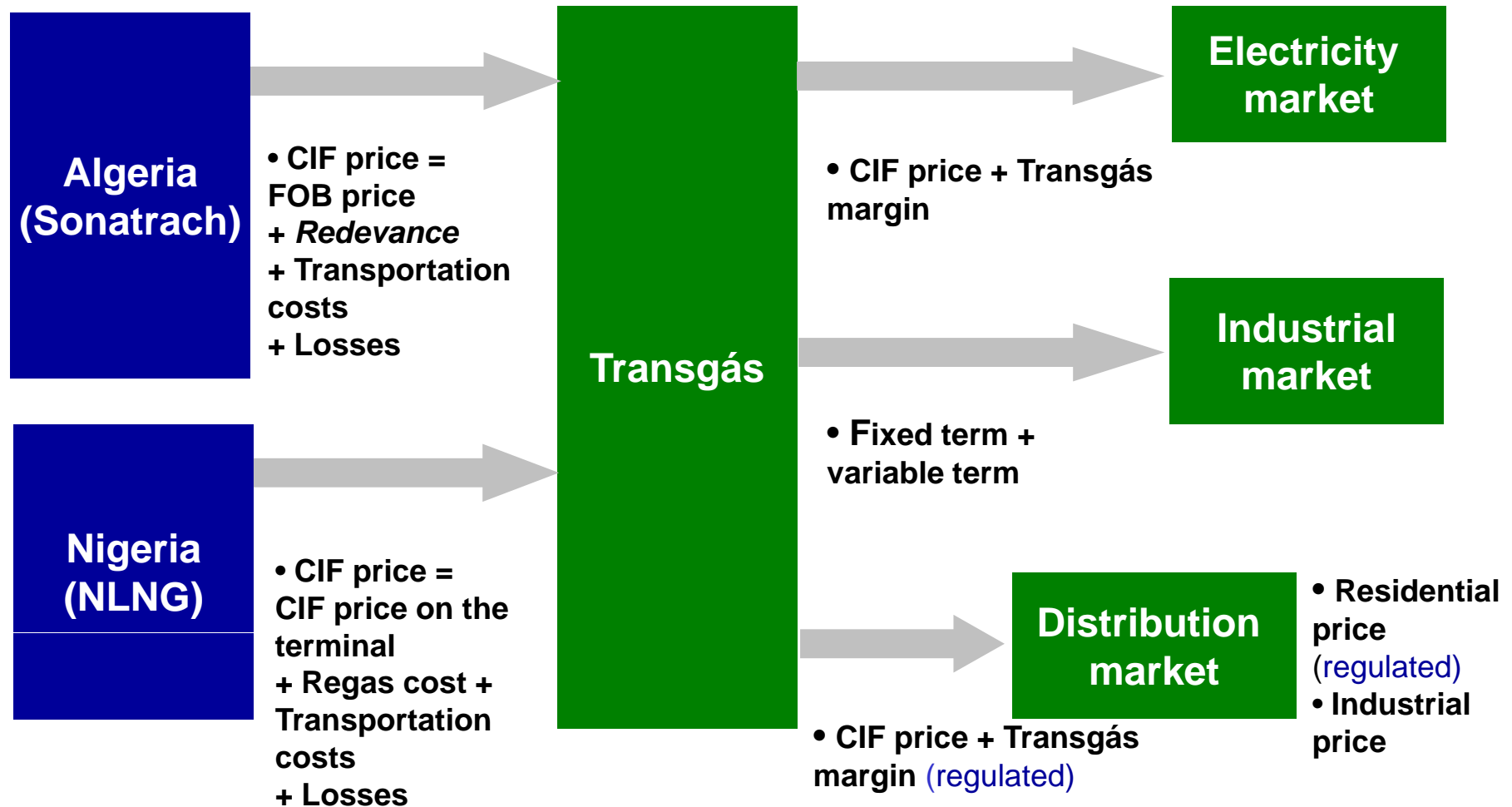
ROCE* International Benchmarking



The current level of profitability is highly affected by the build up phase, when compared with mature markets

$$* \text{ROCE} = \frac{\text{Operating Profit} \times (1-t)}{\text{Shareholders Equity} + \text{Financial Debt}}$$

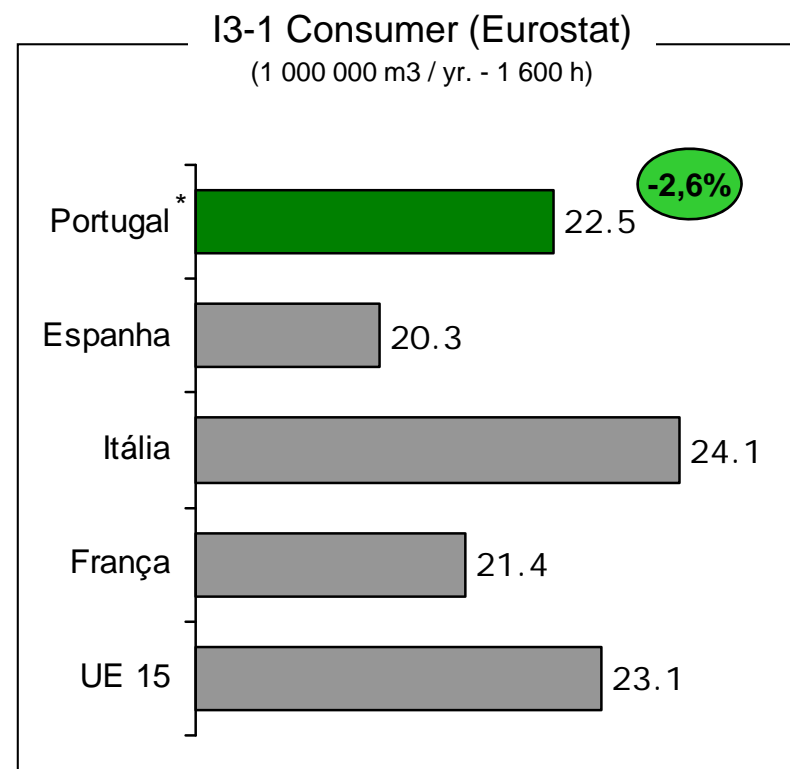
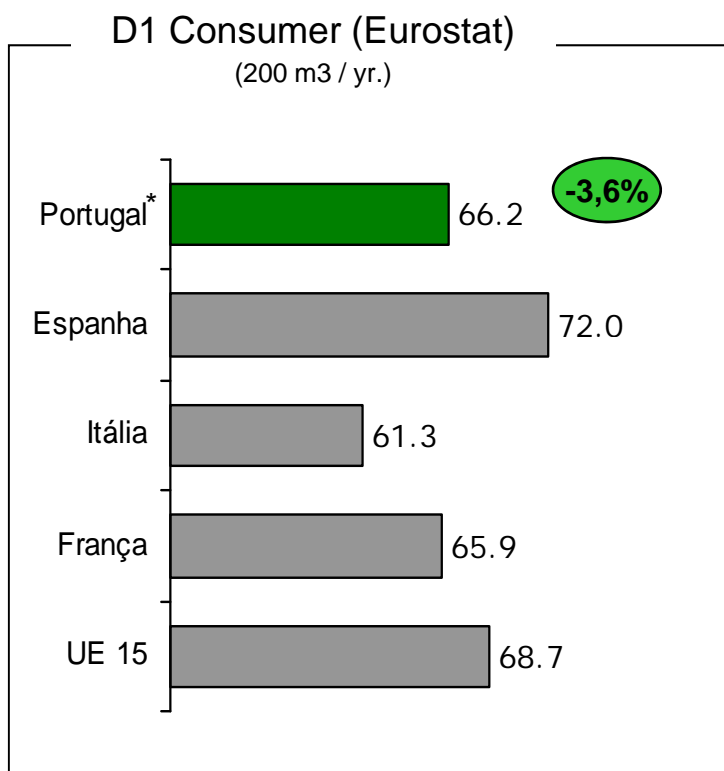
A self-regulated system since the beginning



NG Prices in Portugal: competitiveness

(Euro/ 100 m3. VAT inc. July.2000)

 Portugal vs. EU15



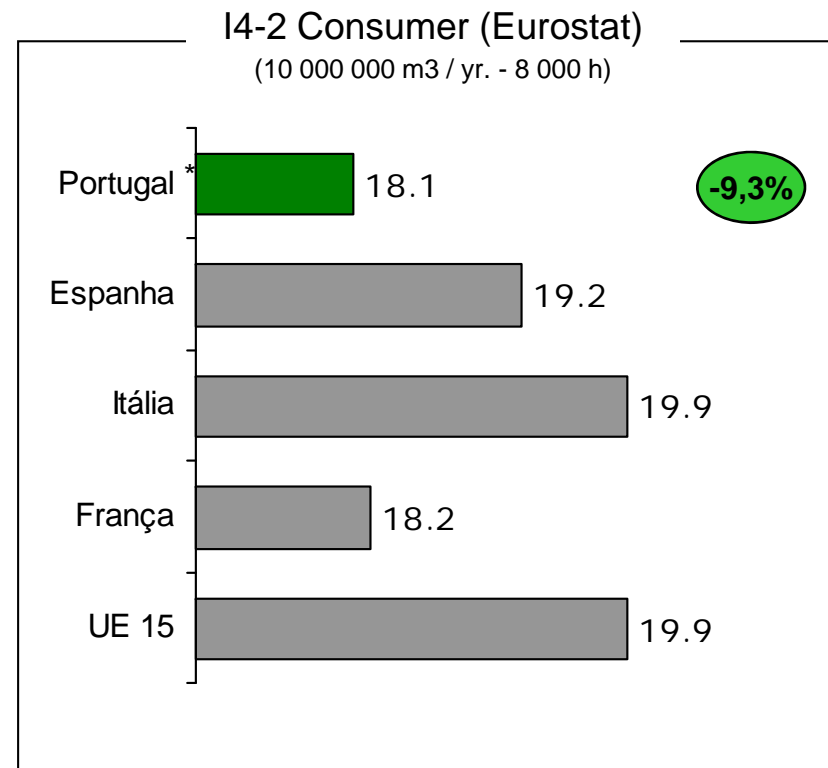
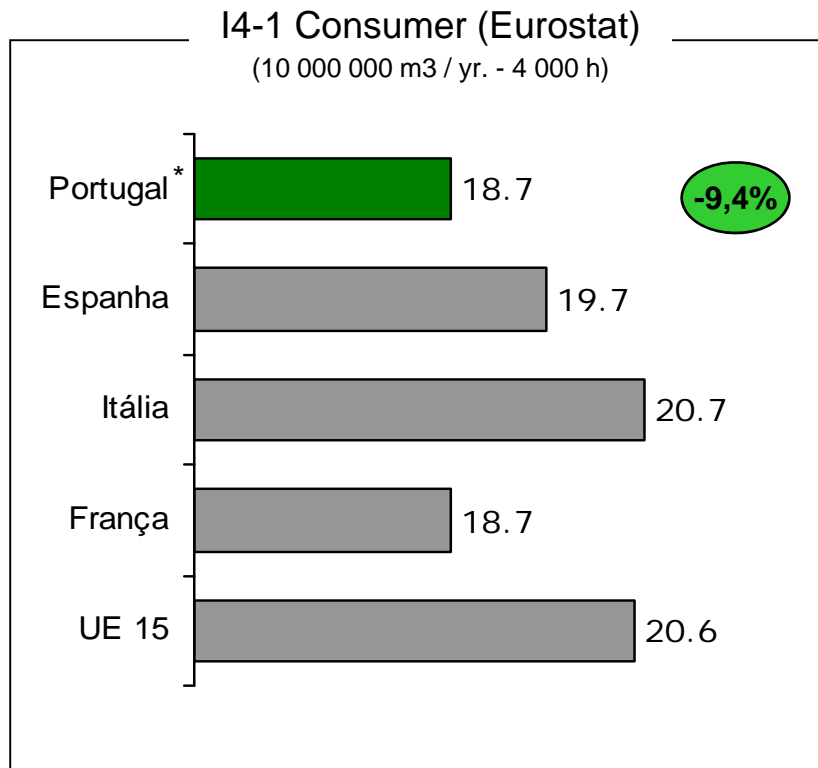
The average NG prices for typical residential customers and medium size industries are aligned with the average prices in EU 15.

* Average in the LDCs, including fixed term
Source: Eurostat. GDP Distribuição.

NG Prices in Portugal: competitiveness (2)

(Euro/ 100 m3. VAT inc. July.2000)

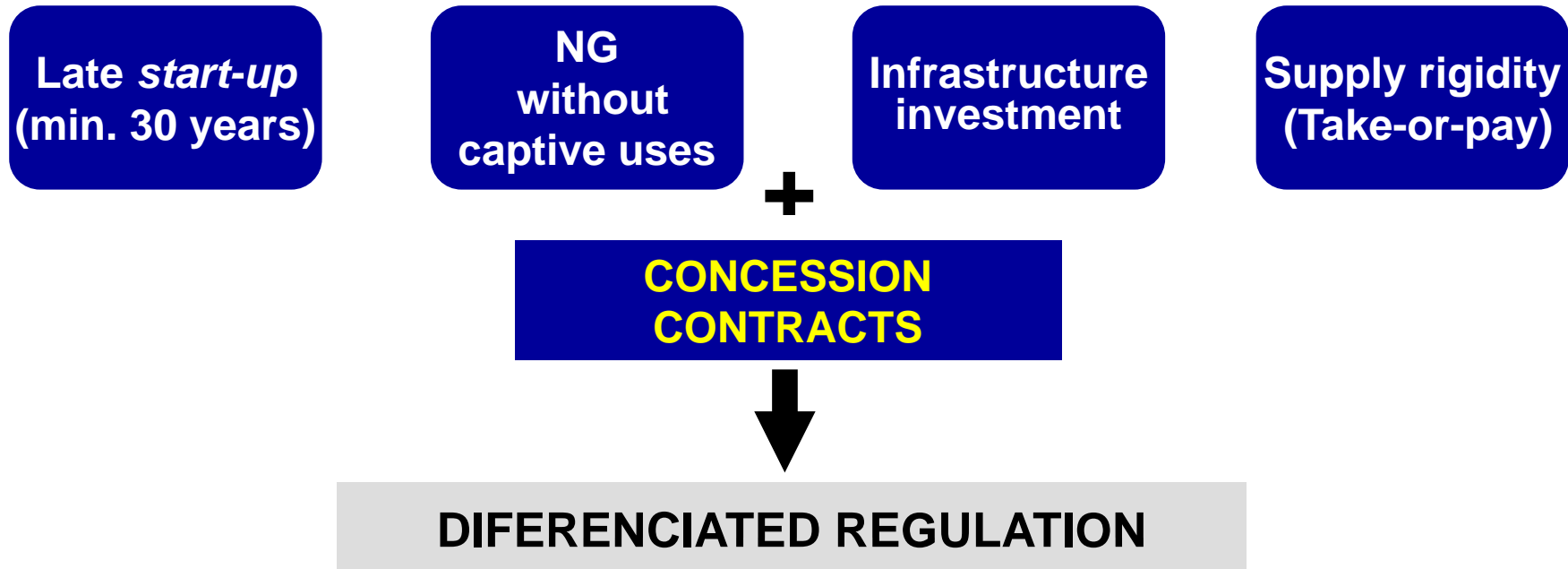
 Portugal vs. UE15



For a large industrial client NG price is 10% below the average price in EU 15.

* Average in the LDCs, including fixed term
Source: Eurostat. GDP Distribuição.

NG in Portugal: What kind of regulation ?



- Monitor concession contracts obligations
- Assure competition between NG and alternative energies
- Prepare liberalisation of the sector

After derogation...

- Drive liberalisation
- Adjust contracts to business evolution

Oil & Gas in the World ... The search for Size and scope



- Acquisition in 1999

Exxon, 1st USA e 2nd world,
acquires 2nd USA e 4th world
Becomes nr. 1 world



- Merge in 1999
- Broken alliance with Mobil in Europe
- Acquisition of ARCO in 2000
- Acquisition of Castrol in 2000

BP, 2nd Europe e 3rd world
merges with Amoco and
acquires ARCO and Castrol.
Becomes nr. 3 world



- Merge in 1999
- Merge in 1999

Total, 4th Europe, acquires Fina,
7th Europe and Elf, 5th Europe.
Becomes nr. 4 world



- Acquisition in 1999

Repsol, 6th Europe, acquires
YPF. Becomes nr. 8 world



- Acquisition in 2000

ENI acquires an independent
(British Borneo)



- Acquisition in 2000

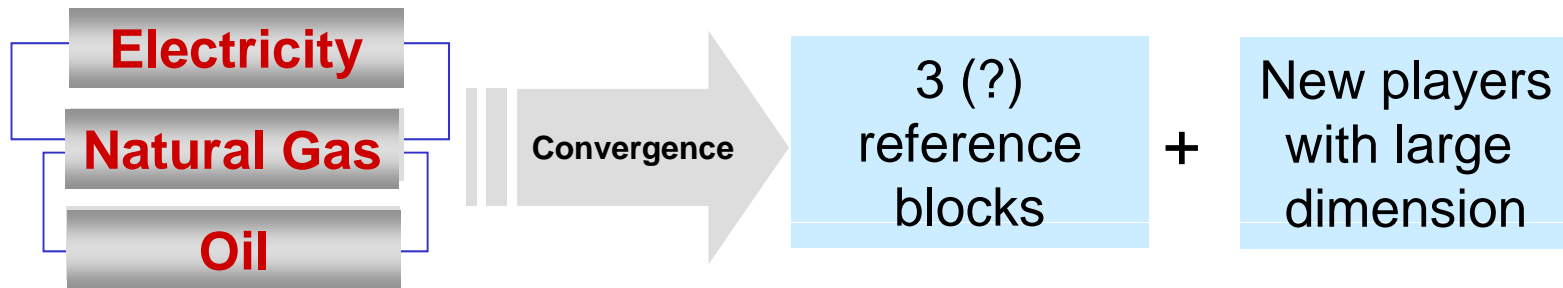
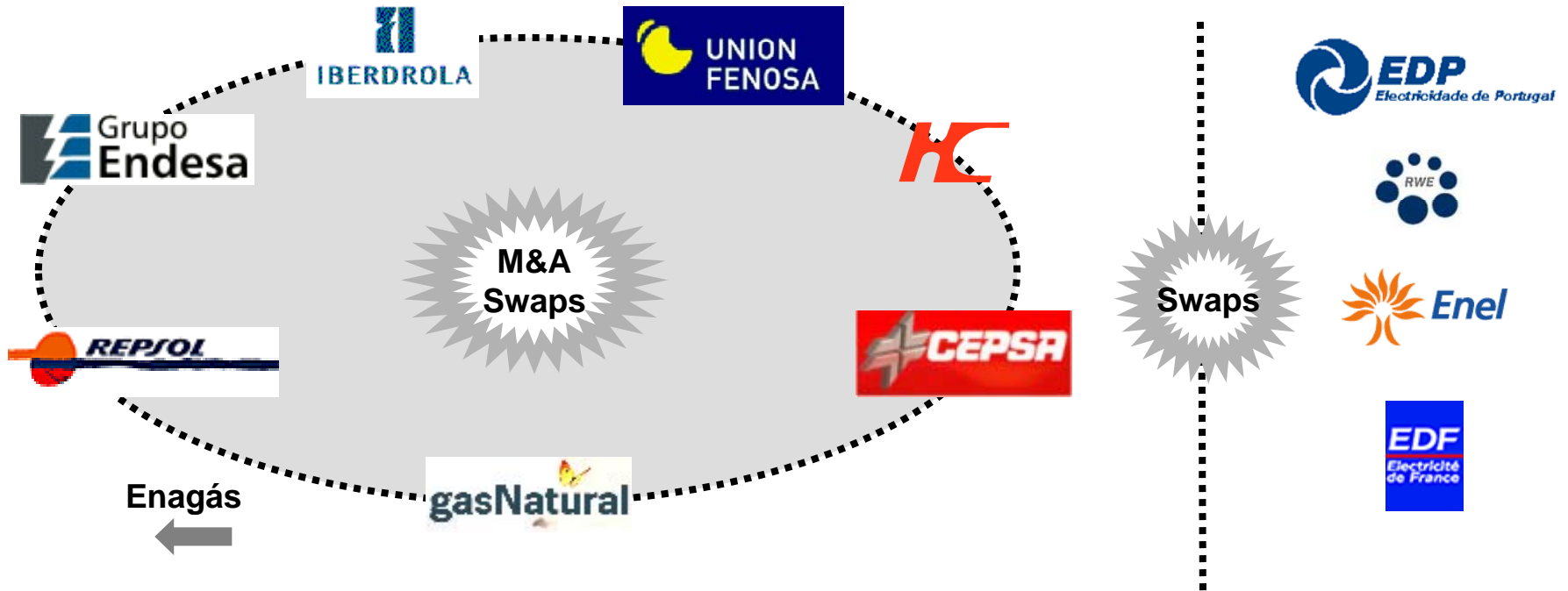
Ameralda Hess buys Lasmo Oil
(that had acquired Monument
Oil&Gas in 1997)



- Merge

4th world operator

Natural Gas in Iberia ... in the middle of a corporate revolution



Natural Gas in Portugal ... bare in mind the differences

1

- NG and Power are increasingly related
- NG and Power markets are different

2

- NG and Power are at very different stages in Portugal

3

- Limited NG players in Iberia

4

- NG price system with a large component of auto-regulation
- NG Prices in Portugal below EU



**Joint Regulator ...
but with very different scopes on each market**