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Competition and Regulation in Energy

Portugal and the Challenges of Globalization

Workshop: GEE, IMF, OECD, DG ECFIN

Lisboa, November 5, 2007

José Braz, **ERSE**

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Topics

- Energy – some stylised facts
- Energy in Portugal and Iberia
- Competition and Regulation
- Is Regulatory Framework improving?

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Energy - Some Stylised Facts

- **Ajustment is slow –** large investments, long recovery periods, entrenched rights (PPAs, ToPs), legacy of vertically integrated monopolies (in Portugal: EDP, CAEs, CMECs)

- **Instantaneous production and consumption** – 24 hourly markets per day; inelastic demand, easy to predict, favours large producers

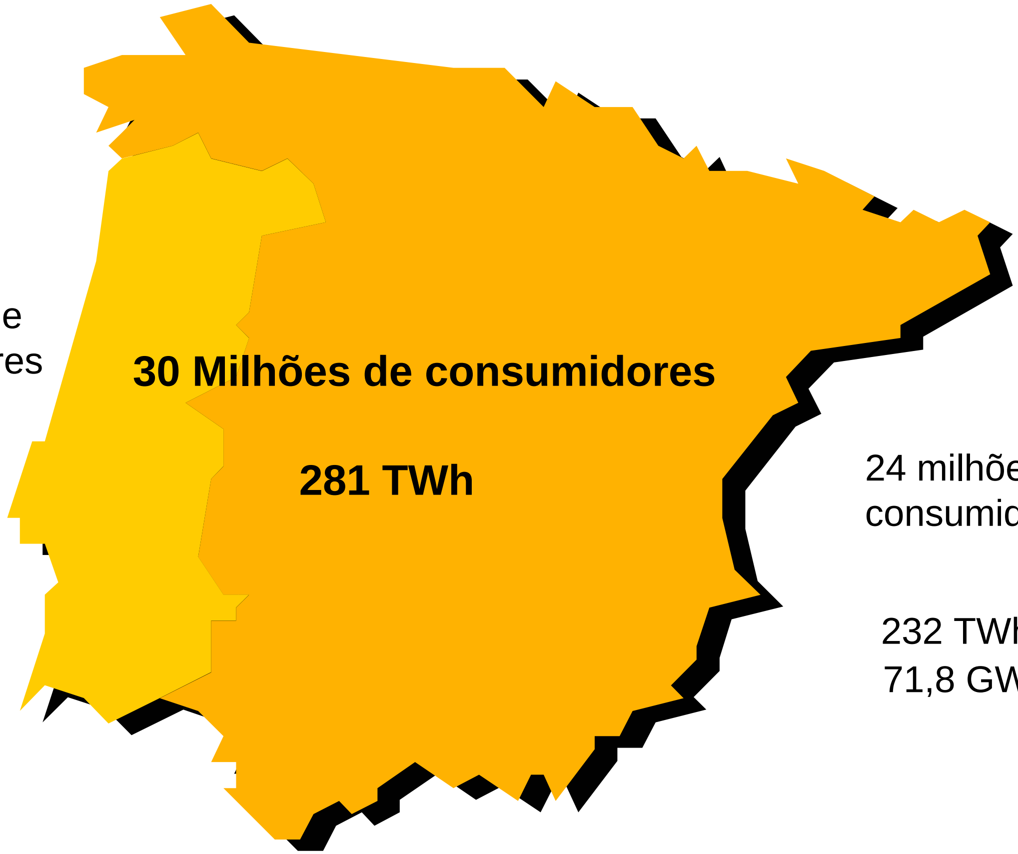
- **Many entry barriers** – licencing, building permits, grid connections, limited interconnection capacity

- **Externalities to internalise** – the "unholy trinity KLM" – Climate change, competitiveness, supply security – opportunities and costs

The Iberian Market - Electricity

6 milhões de
consumidores

49 TWh
13,4 GW



24 milhões de
consumidores

232 TWh
71,8 GW

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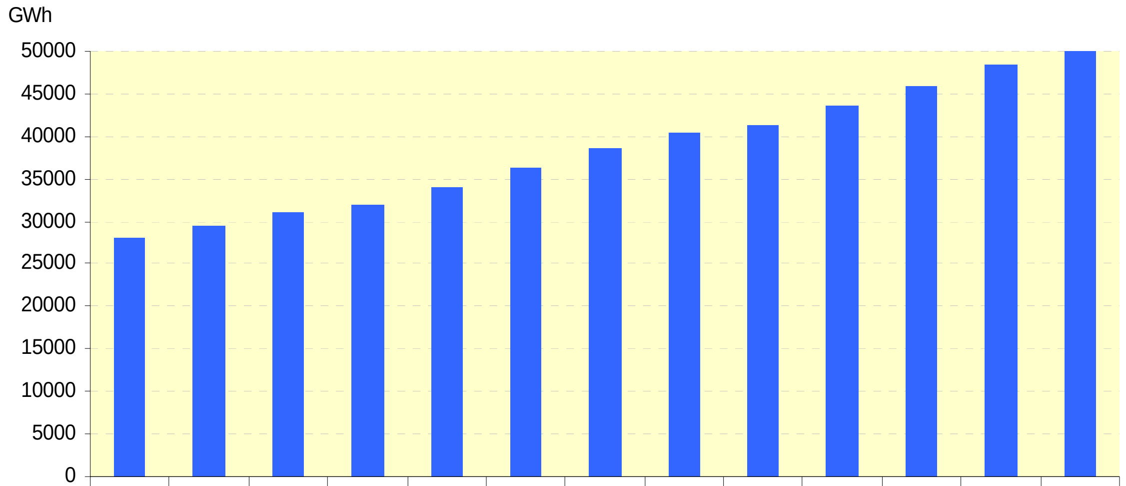
Energy in Portugal and Iberia

Relevant dates:

- 1995: Legal unbundling of transmission network
- 1997: ERSE created
- 1999: Effective regulation began
- 2000: Ownership unbundling of transmission network



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Energy injected in the netwoks	28018	29439	31023	32061	33909	36294	38511	40503	41337	43546	45909	48510	49890

Source:ERSE

Vertical integration | **Legal unbundling** | **Ownership unbundling**

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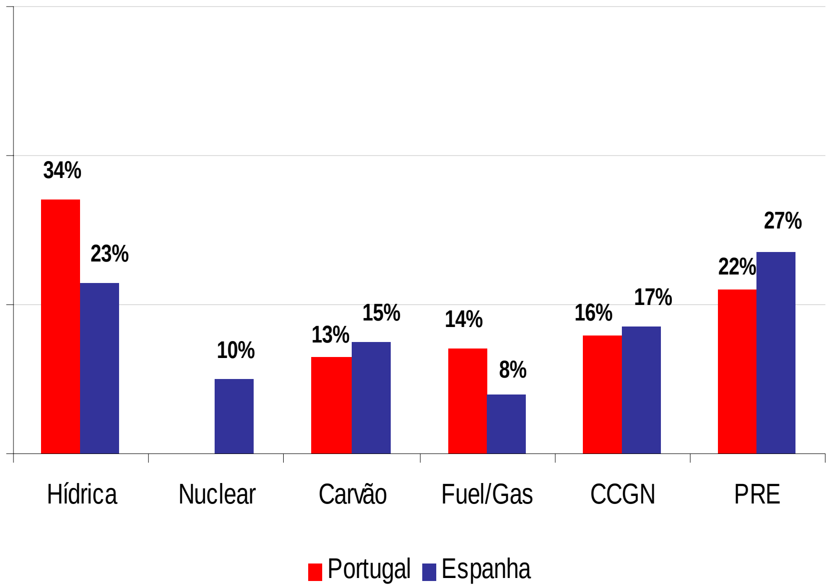
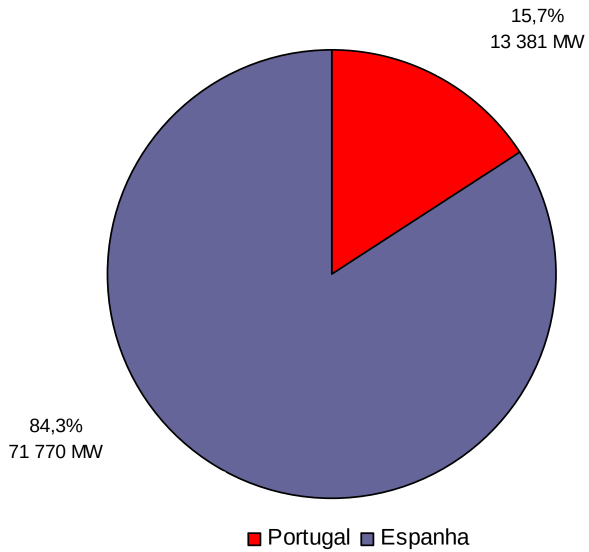
Energy in Portugal and Iberia - 2005





- Installed Capacity by technology (%)

Total Installed Capacity

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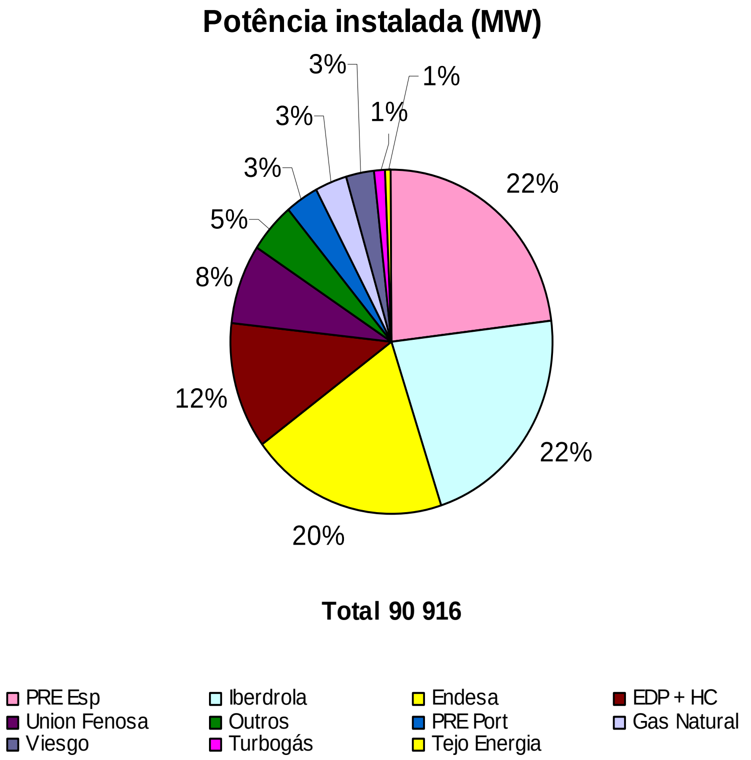
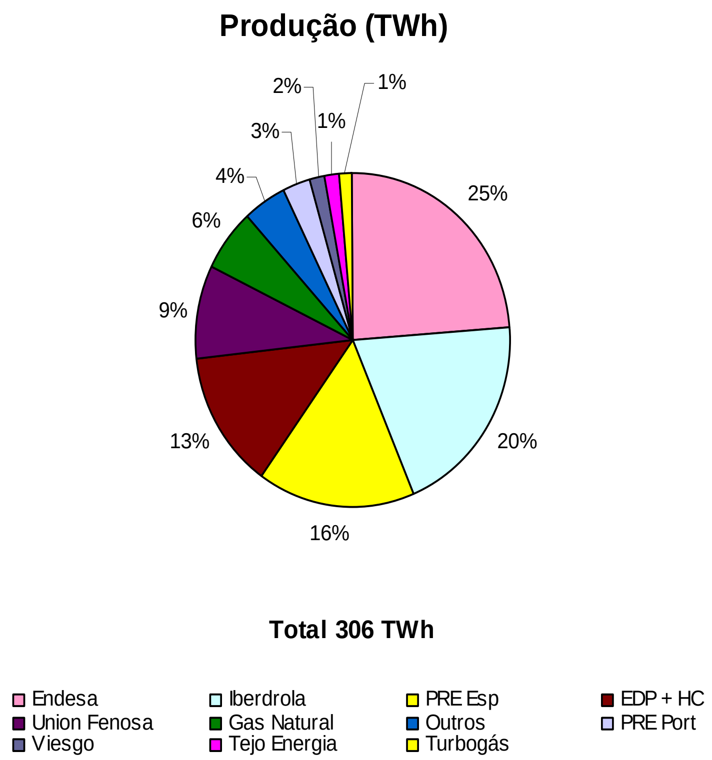
Energy in Portugal and Iberia - Production





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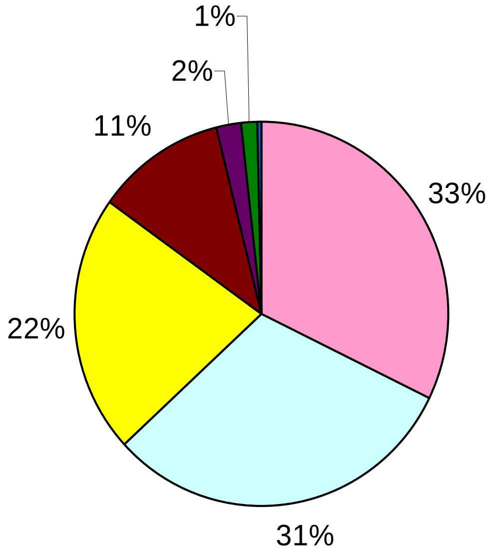
Energy in Portugal and Iberia - Supply

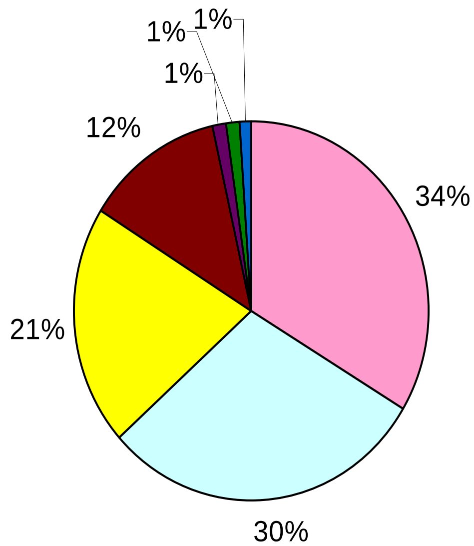
N.º de clientes



Total 30 074 877

Iberdrola | Endesa | EDP + HC | Union Fenosa | Viesgo | Gas Natural | Outros

Consumo (TWh)



Total 277 TWh

Endesa | Iberdrola | EDP + HC | Union Fenosa | Viesgo | Outros | Gas Natural

Energy in Portugal and Iberia – Main Players

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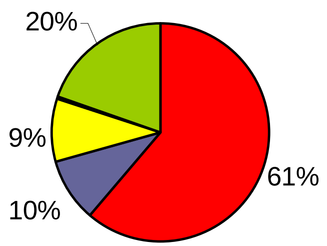
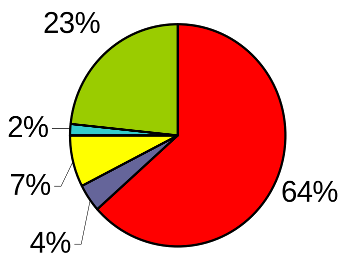
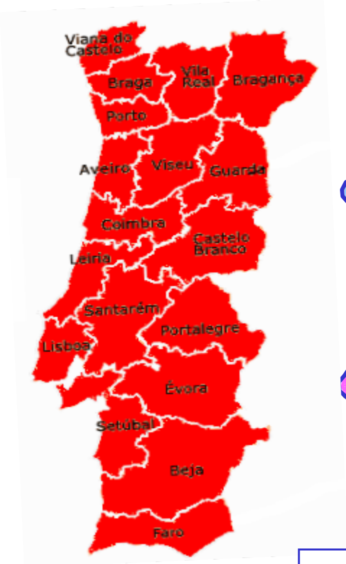
Produção

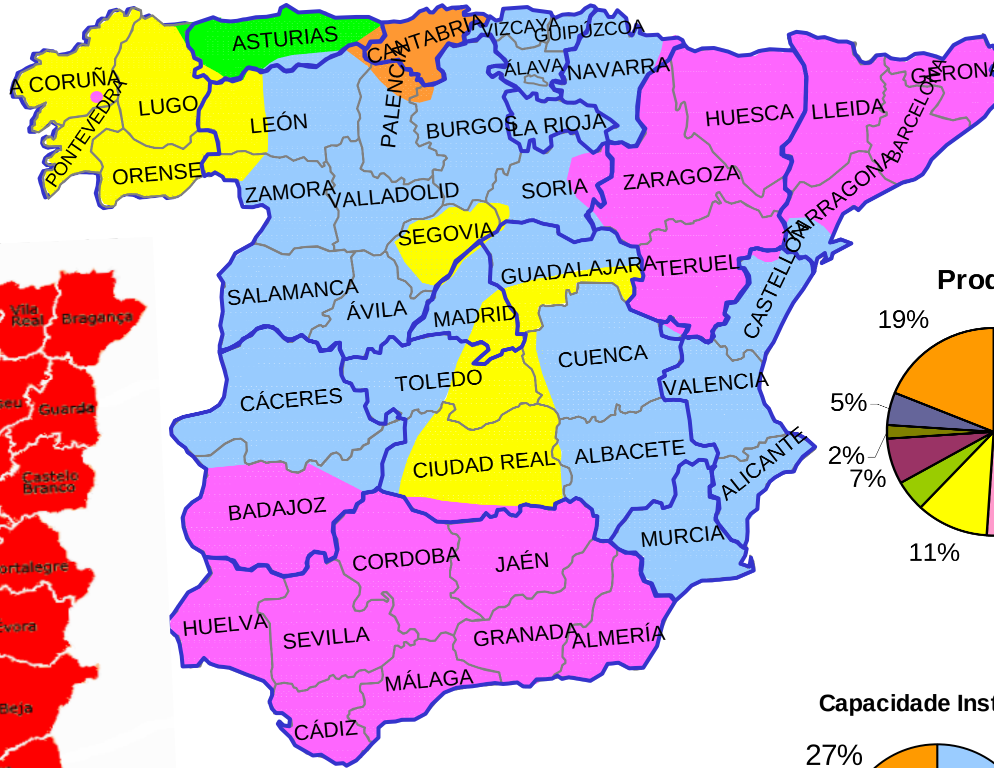


Capacidade instalada

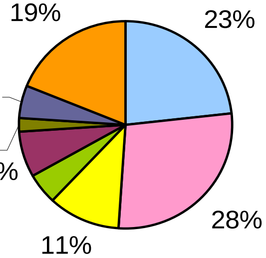


- Grupo EDP
- Turbogás
- PRE
- Tejo Energia
- EDIA

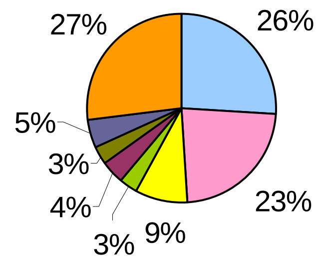




Produção



Capacidade Instalada



- Iberdrola
- Union Fenosa
- Gas Natural
- Otros
- Endesa
- Hidrocantabrico
- Viesgo
- Regimen especial

Energy in Portugal and Iberia – MIBEL

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- Mibel = Reduction of Concentration in Portugal (by increasing market from Portugal to Iberia)
- Mibel: from July 1, 2007, single spot and futures markets; harmonized market rules (incl. Smartmetering, Supplier-change rules)
- BUT, limited interconnection = market-splitting (EDP still dominant 80% of the time; prices higher in Portugal than in Spain but lower now than with CAEs)
- Solutions:
  - long-term: increase interconnection; increase production by competitors
  - Immediate: VPPs, market monitoring

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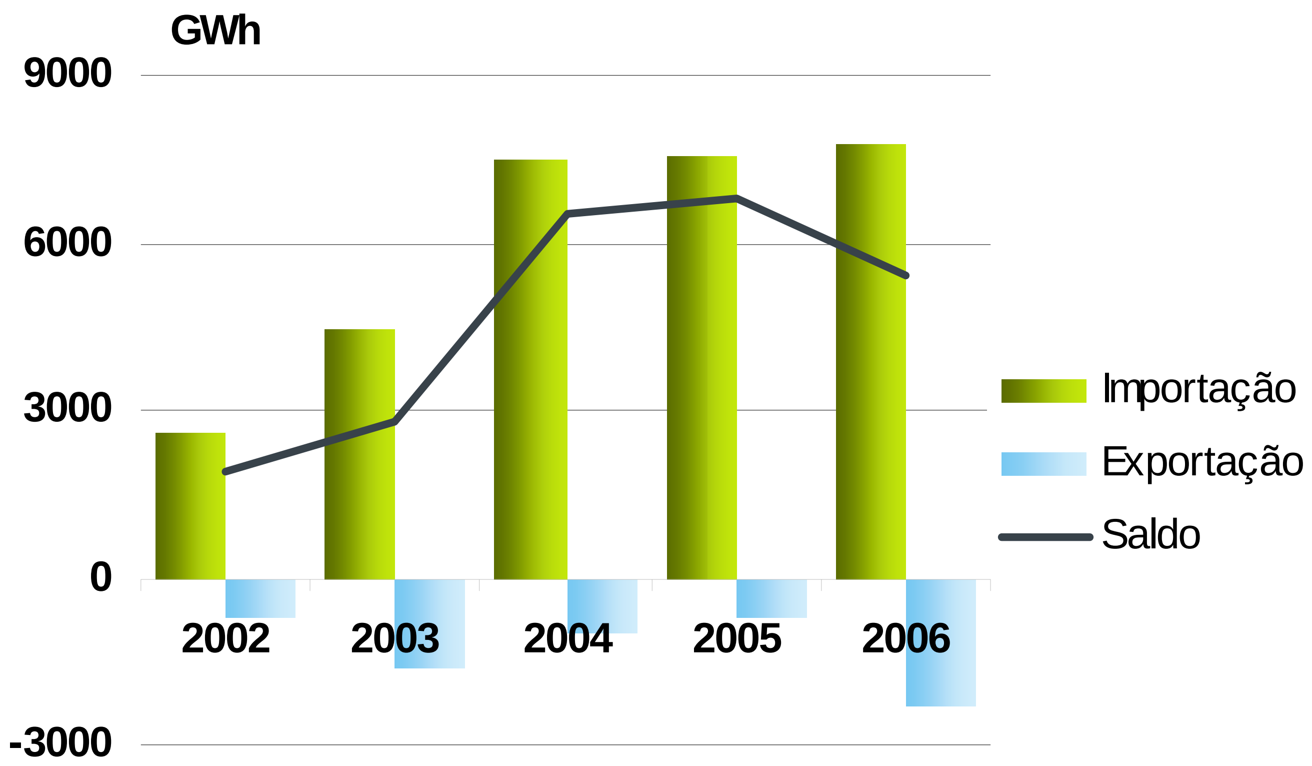
Energy in Portugal and Iberia – MIBEL flows



Energy in Portugal and Iberia – Liberalized Market

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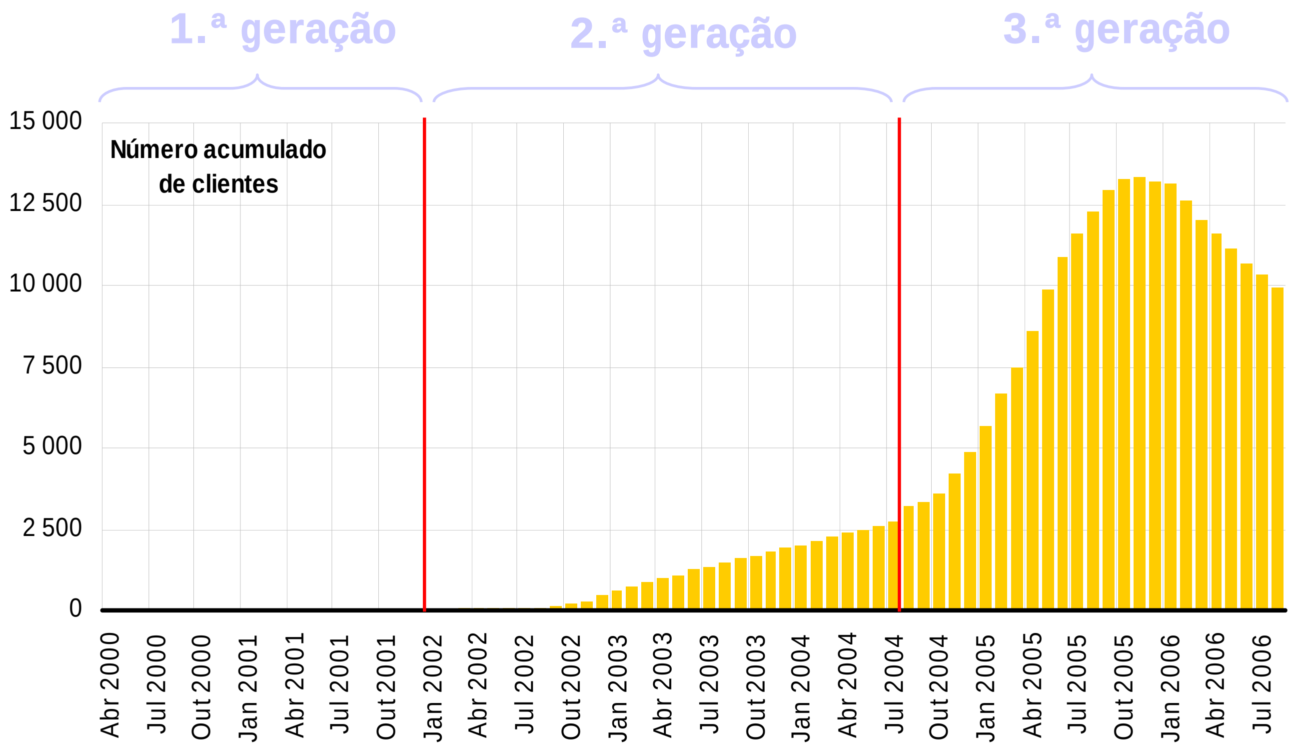
- Liberalized market in Portugal – nº of clients



Energy in Portugal and Iberia – Liberalized Market

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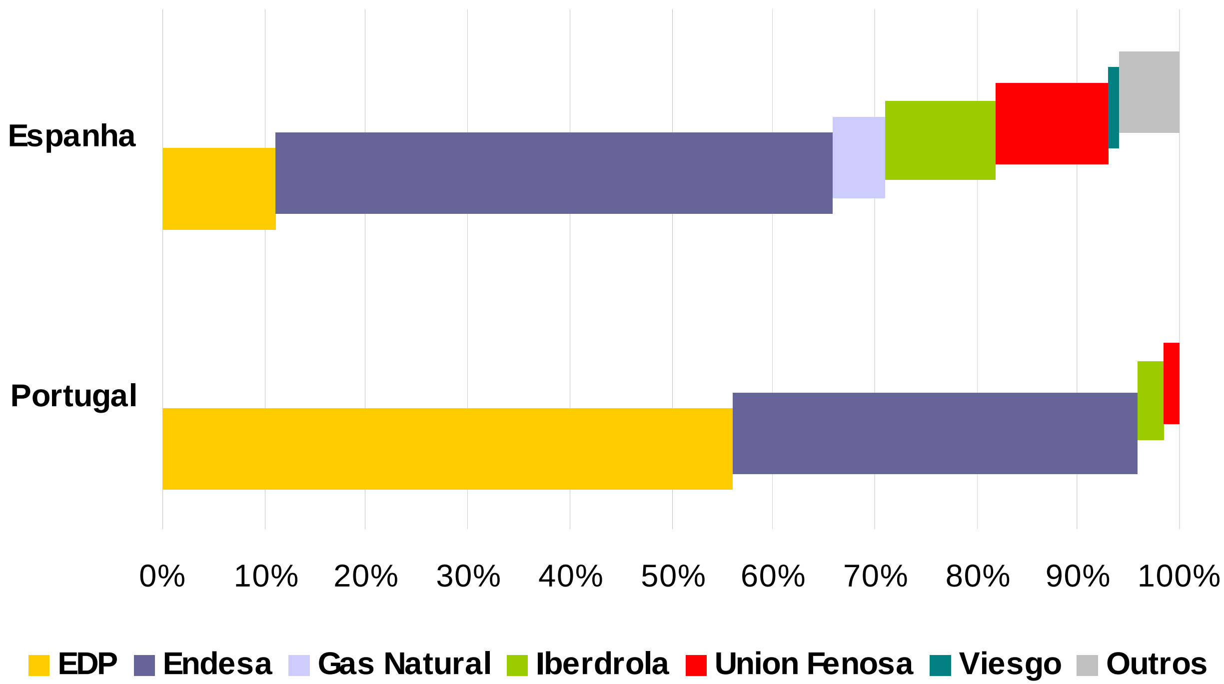
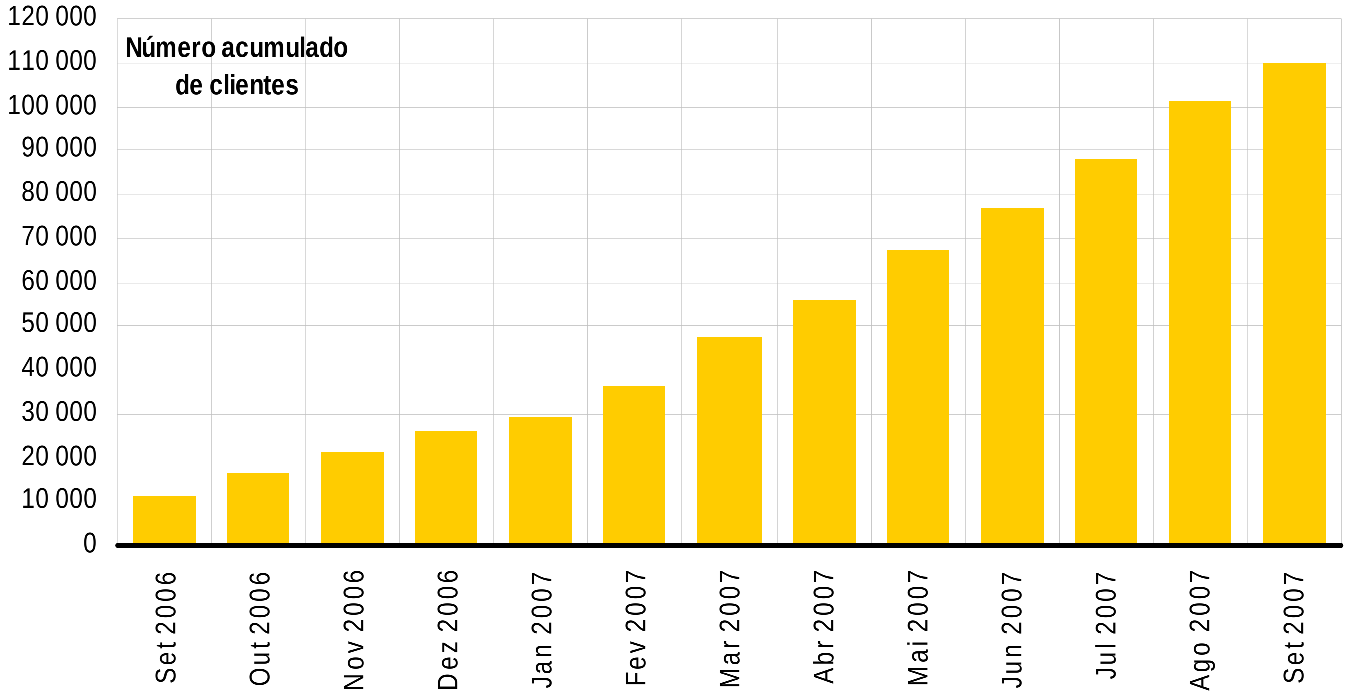
Liberalized Electricity Market in 2006 – Spain and Portugal



Energy in Portugal and Iberia – Liberalized Market

Total number of clients



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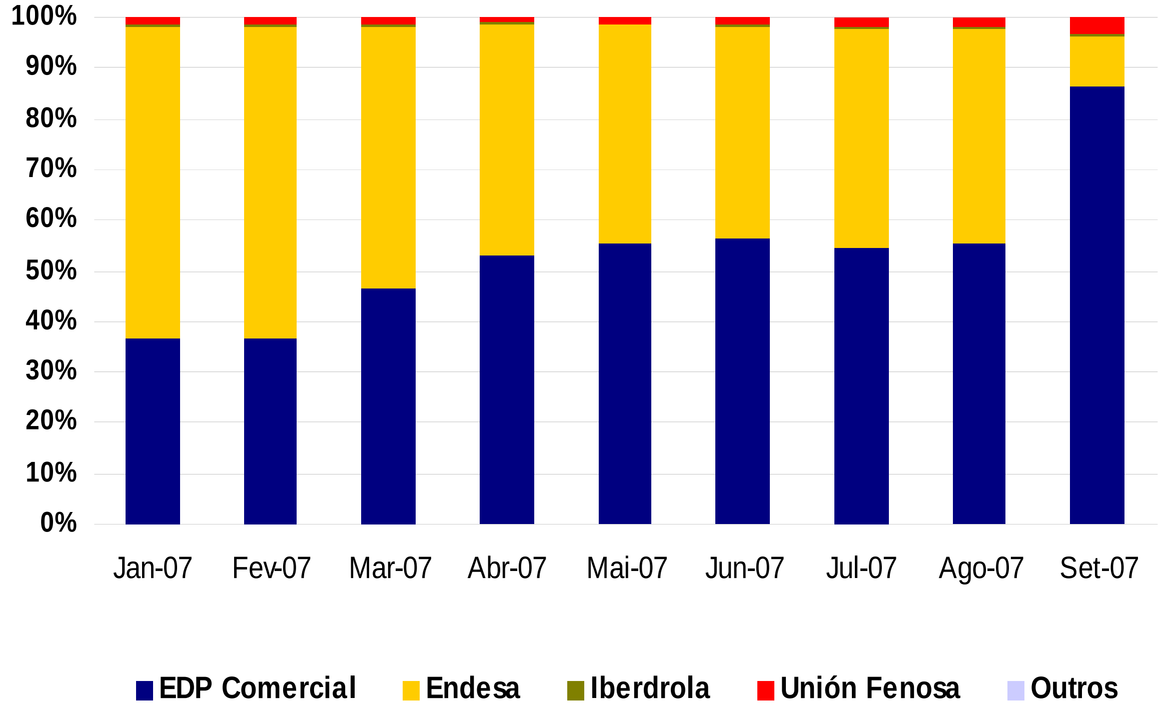
Energy in Portugal – Liberalized Market Setback

Evolution of liberalised market shares 2007 – Electricity Supply



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Energy in Portugal and Iberia – Integration

- Limited Interconnection Capacity limits Market integration
- and Effective Competition (both bilaterally and, crucially, for Single European Energy Market)

- July 2007 capacity:

Fronteira	Capacidade Importação (MW)	Capacidade Exportação (MW)	Utilização Importação (%)	Utilização Exportação (%)
Espanha - Portugal	-701	1.000	0%	96%
Espanha - França	-1.103	285	86%	3%
Espanha - Marrocos	-584	629	0%	61%

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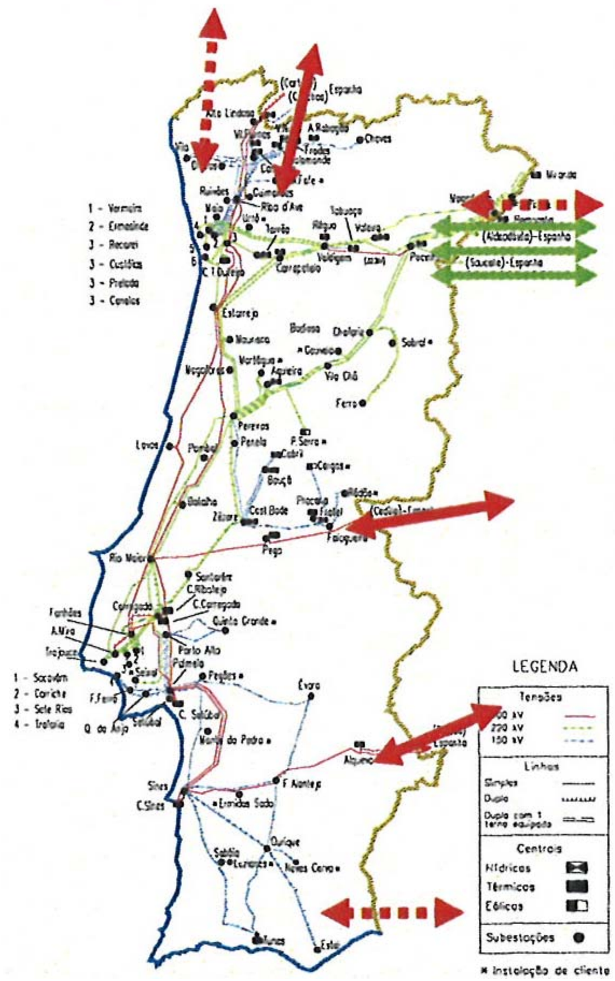
Energy in Portugal and Iberia – Integration

- REN – REE joint study of 2006 shows possibility of doubling capacity to 3000 MW, with:
  - 2 new 400 kV links
    - → Minho – Galiza
    - → Algarve – Andaluzia
  - some internal grid upgrades in Portugal and Spain.

- In 2010, with projected demand:

- Portugal-Spain: 3000 MW = 27% Portugal peak demand (one of highest levels in EU

- Spain-France: 4000 MW – 8% Spain peak demand



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Competition and Regulation – Main Themes

- Trade-off: increased Competition reduces need for Regulation

- In present market, regulator’s role is to set prices for grids, establish regulated tariffs, and try to prevent market abuse by dominant players

- Objective: ensure quality supply at lowest-possible prices; in turn, implies ensuring investment for production, transport and distribution (can involve trade-off between lower prices today or in future, via increased competition)

- Energy Policy decisions also impact competition, but Regulator does not set Energy Policy – can, at best, advise when requested

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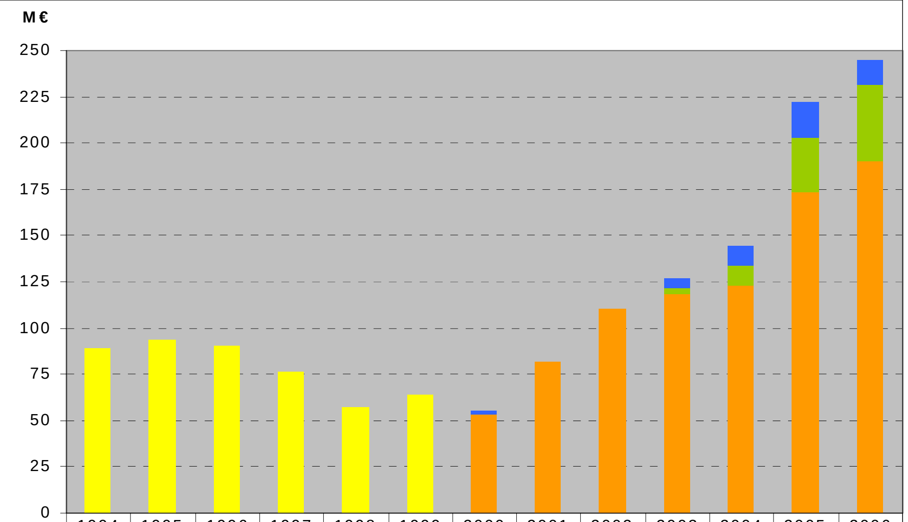
Competition and Regulation – Unbundling evidence

Transmission network total investment (at constant 2006 prices)



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total	89,395	93,741	90,637	76,358	57,113	63,942	0	0	0	0	0	0	0
International interconnections	0	0	0	0	0	0	1,938	0,112	0,123	5,180	10,858	19,056	13,123
Special Regime Generation connections	0	0	0	0	0	0	0	0	0	3,509	10,568	29,469	41,612
Other investments	0	0	0	0	0	0	53,014	81,543	110,19	118,43	123,01	173,65	189,96

Source: ERSE (with REN data)

Vertical integration **Legal unbundling** **Ownership unbundling**

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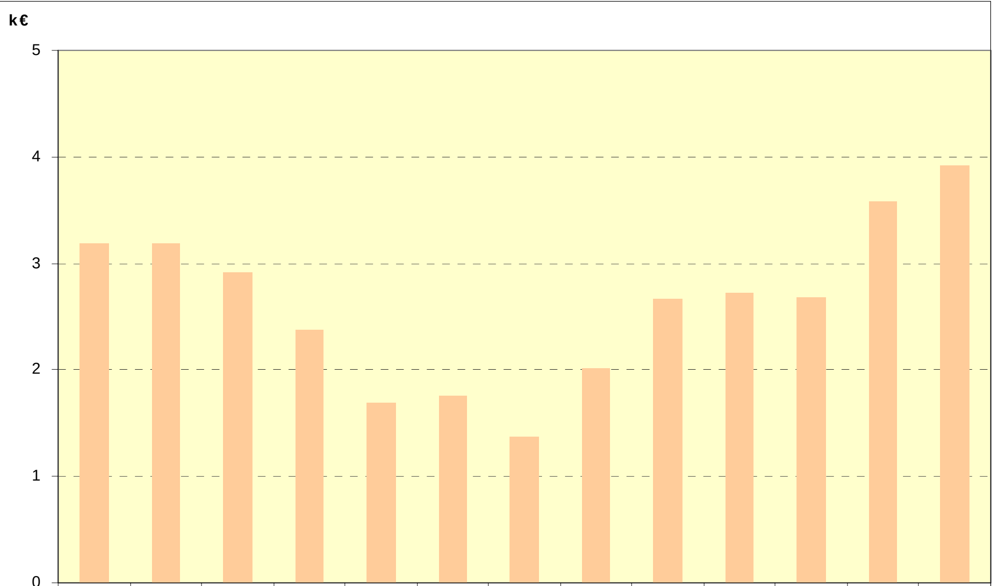
Competition and Regulation – Unbundling evidence

Transmission network investment excluding Special Regime Generation + MIBEL (at constant prices and demand)



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Investments per TWh [k€/TWh]	3,191	3,184	2,922	2,382	1,684	1,762	1,377	2,013	2,666	2,720	2,680	3,580	3,916

Source: ERSE (with REN data)

Vertical integration **Legal unbundling** **Ownership unbundling**

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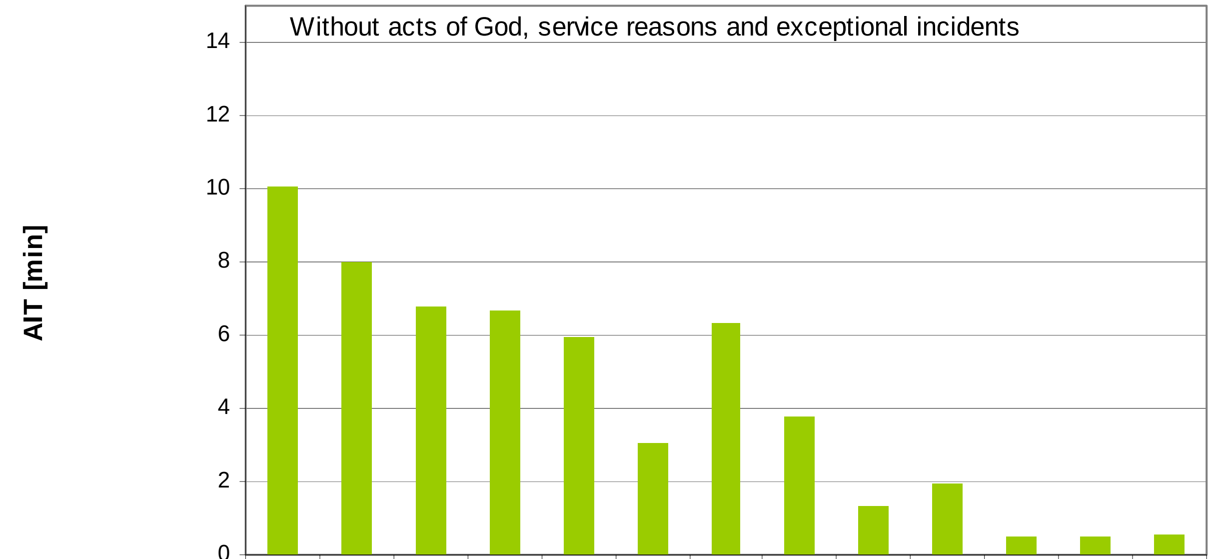
Competition and Regulation – Unbundling evidence

Average Interruption Time (excluding exceptional events)



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
others with t> 3 min	10,04	7,98	6,79	6,64	5,93	3,04	6,32	3,76	1,31	1,95	0,52	0,49	0,57

Source: ERSE

Vertical integration → **Legal unbundling** → **Ownership unbundling**

Competition and Regulation – Unbundling evidence

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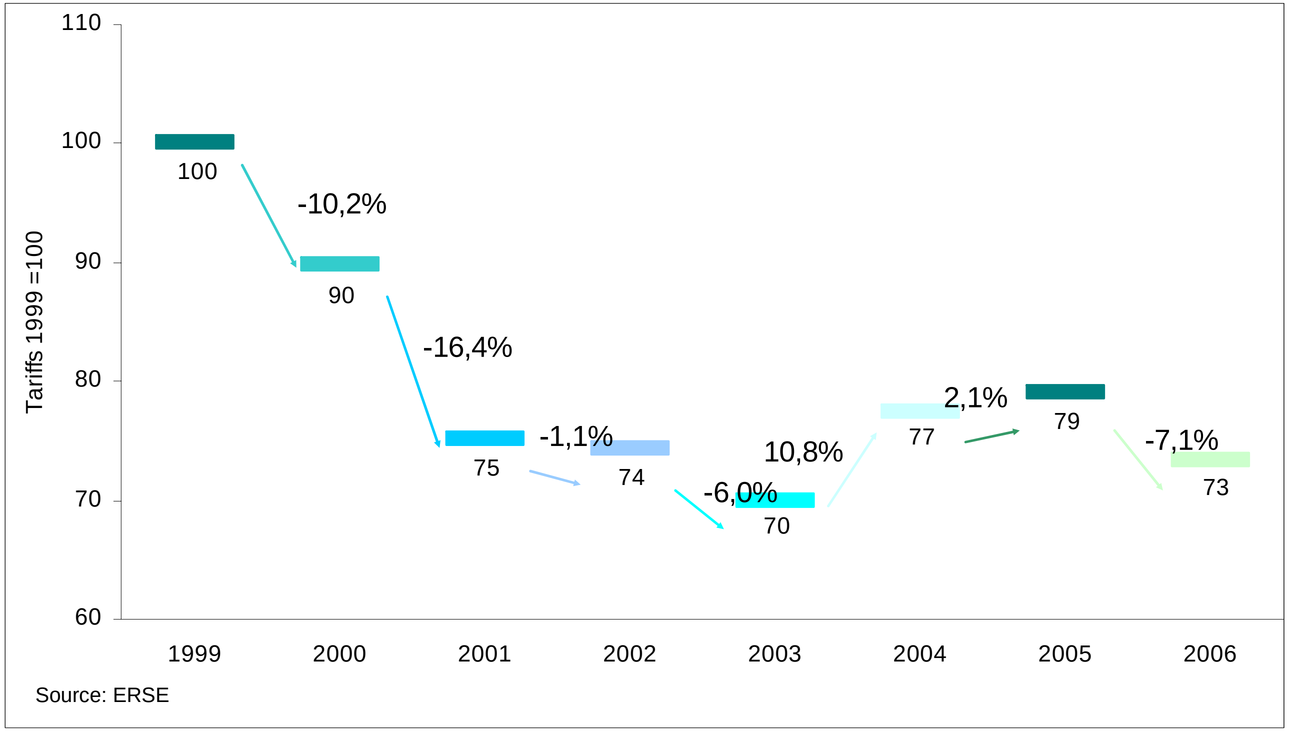
General Transmission Tariff



Legal unbundling **Ownership unbundling**

Competition and Regulation – Unbundling evidence

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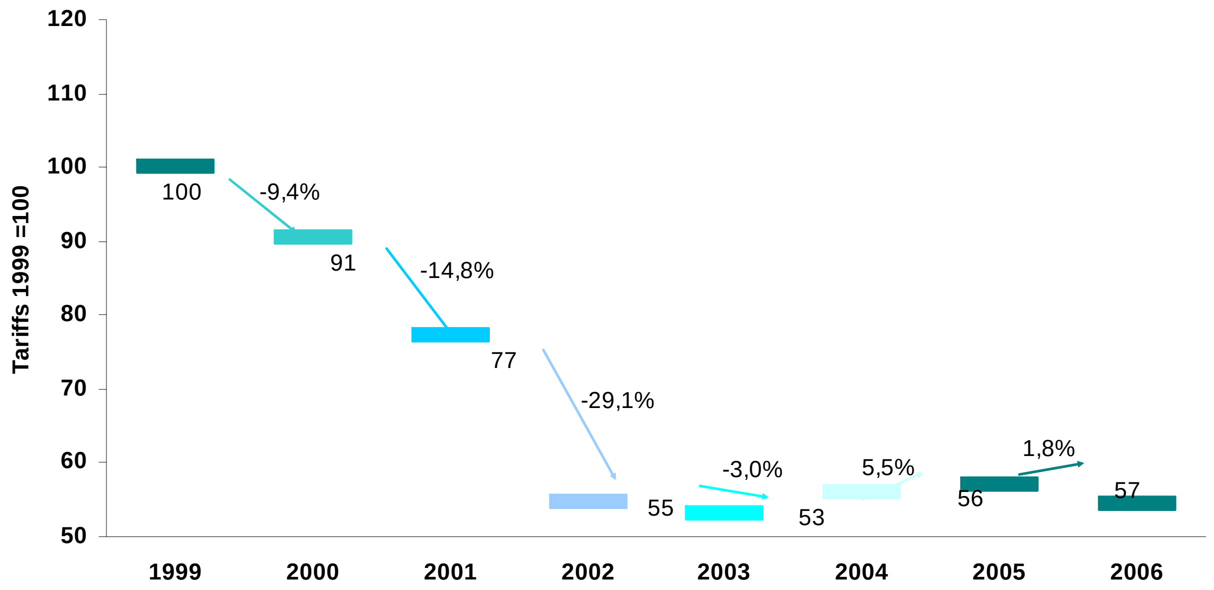
VHV Transmission Tariff



Source: ERSE

Legal unbundling **Ownership unbundling**

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Finally - is Regulatory Framework Improving?

- Portugal already complies with most EU market integration rules, including 3rd Package (launched Sept 19 2007, perhaps in place by 2012): ownership unbundling, (relatively) independent Regulator, liberalised electricity and (almost) gas markets

- BUT, market is still hampered by dominance of incumbent

- Over next 3-5 years, expectations of increased competition in production; increased interconnection within Mibel; gradual reduction of dependence on regulated tariffs; increased independence of Regulator

- Conclusion: in all likelihood, Regulatory Framework is set to continue improving