

Electricity Benchmarking Analysis and Policy Priorities

*This presentation provides a summary
of the main report.*

December 2007

Structure

- ▶ Electricity and Enterprise Development
- ▶ Ireland's Comparative Performance
- ▶ Conclusions and Policy Priorities

Electricity & Enterprise Development

- ▶ Promoting energy production and consumption patterns that are environmentally sustainable, cost competitive and secure is a challenge that has moved to the top of the political agenda across the globe and is central to any discussion of national competitiveness.
- ▶ Energy is a key input to enterprise production activities. Ireland's ability to continue attracting high levels of foreign direct investment and to provide a supportive environment for Irish industry generally will depend on its capacity to deliver a secure and sustainable energy supply at a competitive cost.

Ireland's Comparative Performance

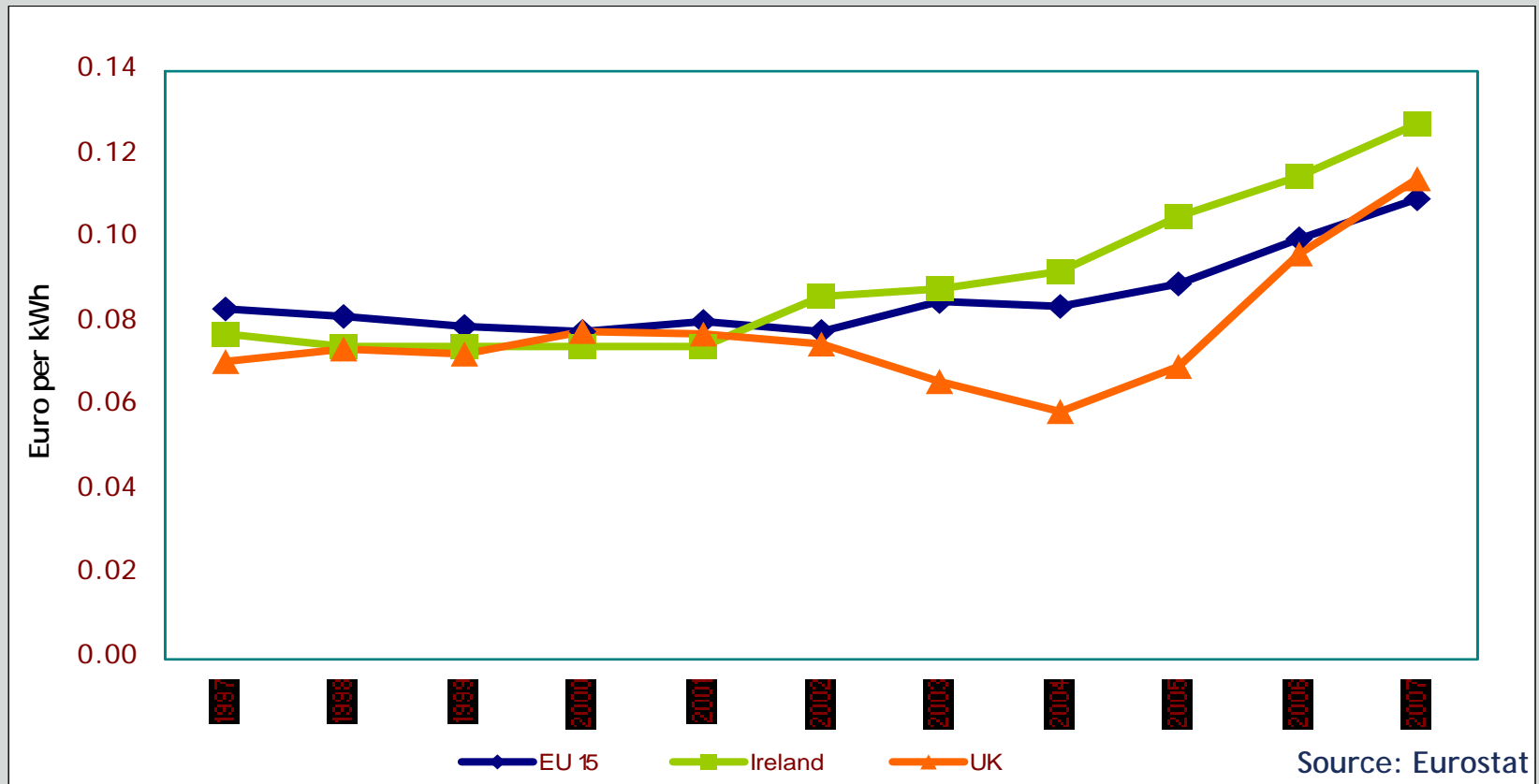
Key Findings (1)

- ▶ The increase in electricity demand in Ireland in recent years has been among the highest in the OECD. Electricity demand grew by 4.5% in 2006, which is the equivalent of a new 400 MW generation plant being absorbed every two years.
- ▶ The rate of increase in industrial electricity prices (excluding VAT but including other taxes) in Ireland between January 2001 and January 2007 was almost twice that of the EU-15.
- ▶ Industrial electricity prices in Ireland were the second highest of the EU-25 as of January 2007. Industrial electricity prices in Ireland were 18.7% above the EU-15 average compared to 16.7% in 2006.

Key Findings (2)

- ▶ Maintaining security of supply in the short to medium term will be a significant challenge. In the short term, increased uncertainty around the availability of some older generating plants could lead to tight but manageable capacity margins during the winter 2007 peak period. For the period 2008-2010, significant improvements in the availability performance of generating plant from the current low level of 77% is critical to avoid generation capacity deficits.
- ▶ On a per capita basis, Ireland had the second highest CO₂ emissions of the EU-15 in 2005. Although there has been an improvement in the levels of CO₂ emissions per capita between 2000 and 2005, which declined by 2.3%, total carbon emissions in Ireland actually increased by 5.4%. Emissions increased by 3.8% across the EU-15 between 2000 and 2005.

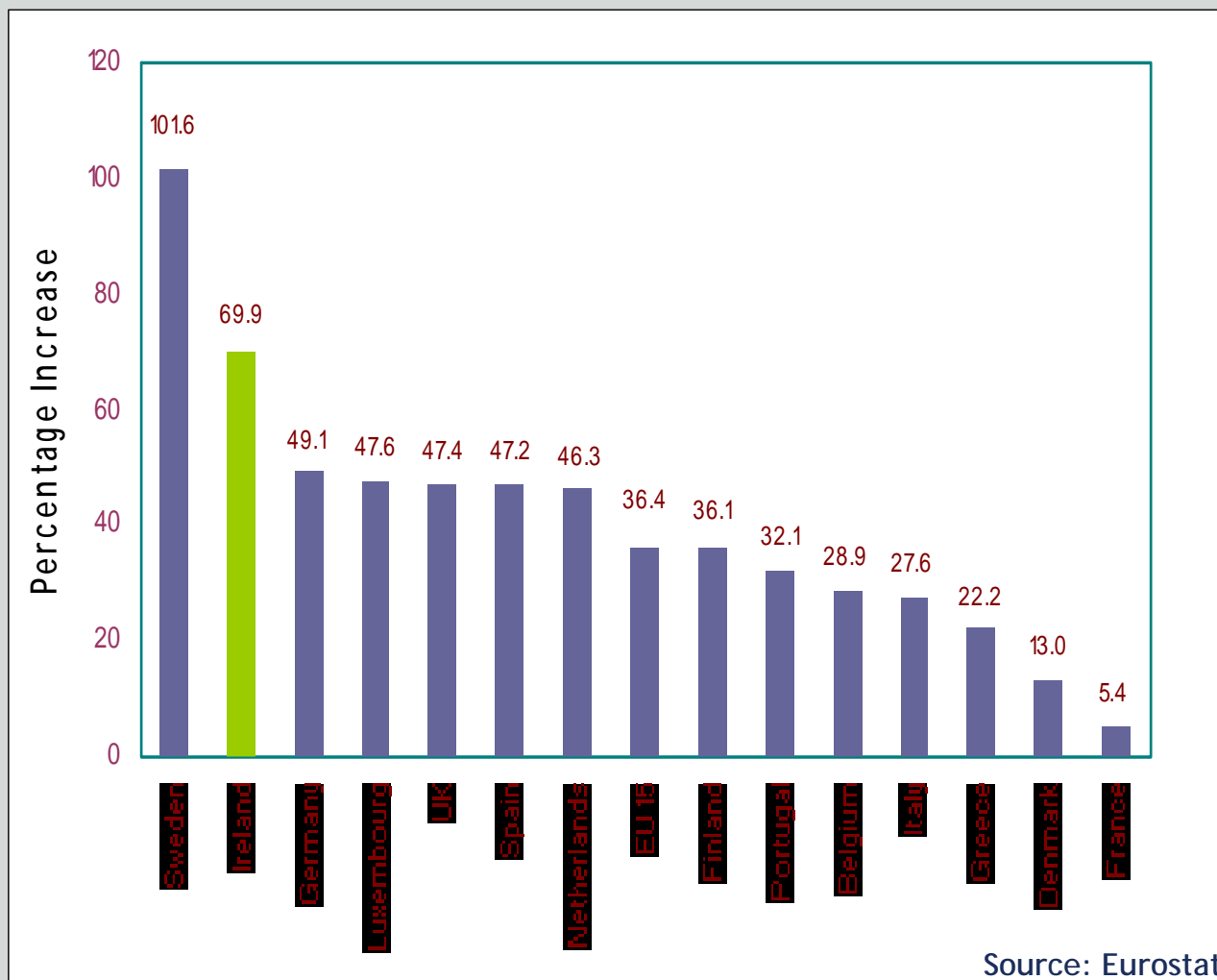
Industrial Electricity Price Trends: 1997-2007



The competitiveness gap between industrial electricity prices (excluding VAT but including other taxes) in Ireland and the EU-15 continues to increase. The gap with the UK has narrowed since 2004.

Note: Industrial electricity prices are based on annual consumption of 2,000 MWh; maximum demand of 500 kW and annual load of 4,000 hours.

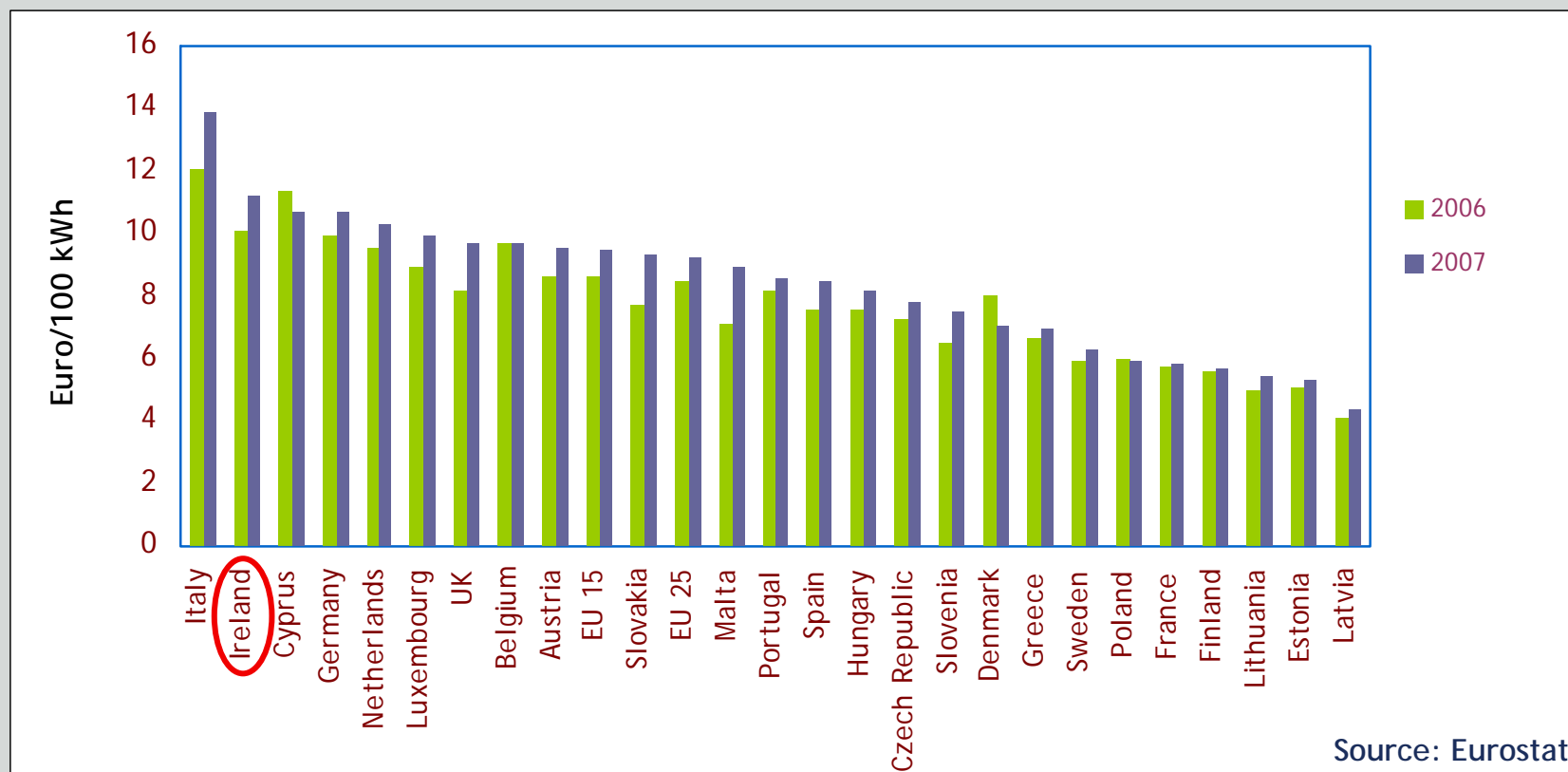
Percentage Increase in Industrial Electricity Prices (excl. VAT but incl. other taxes): 1 Jan 2001 to 1 Jan 2007



Many countries experienced significant increases in electricity prices between 2001 and 2007.

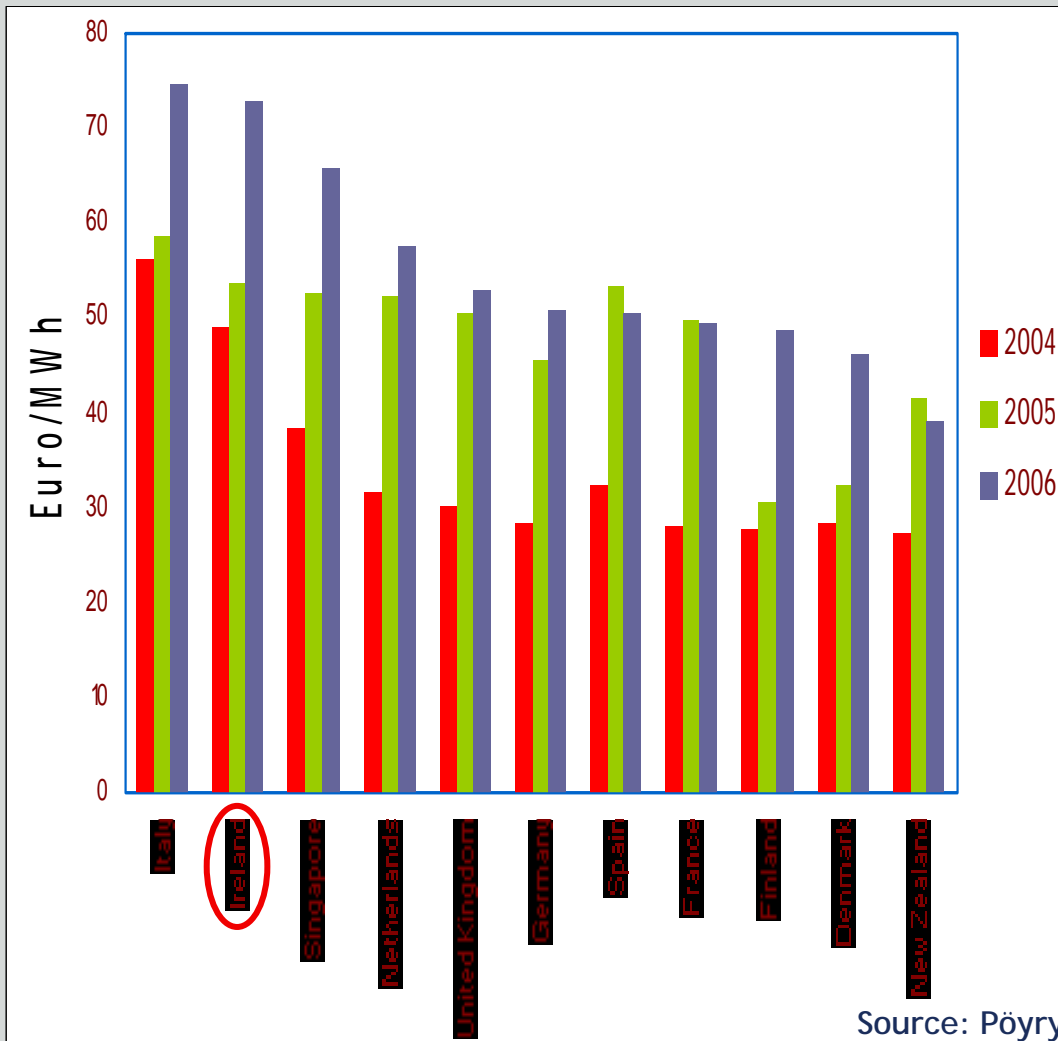
However, Irish industrial electricity prices increased by almost 70% (excluding VAT but including other taxes), which is almost twice the EU-15 average of 36.4%.

Industrial Electricity Prices (excl. VAT but incl. other taxes): 1 Jan 2006 vs. 1 Jan 2007



Industrial electricity prices (excluding VAT but including other taxes) in Ireland were the second highest in the EU-25 in January 2007. In 2006, Ireland ranked third highest in the EU-25. Irish industrial prices were 18.7% above the EU-15 average in January 2007 compared to 16.7% in 2006.

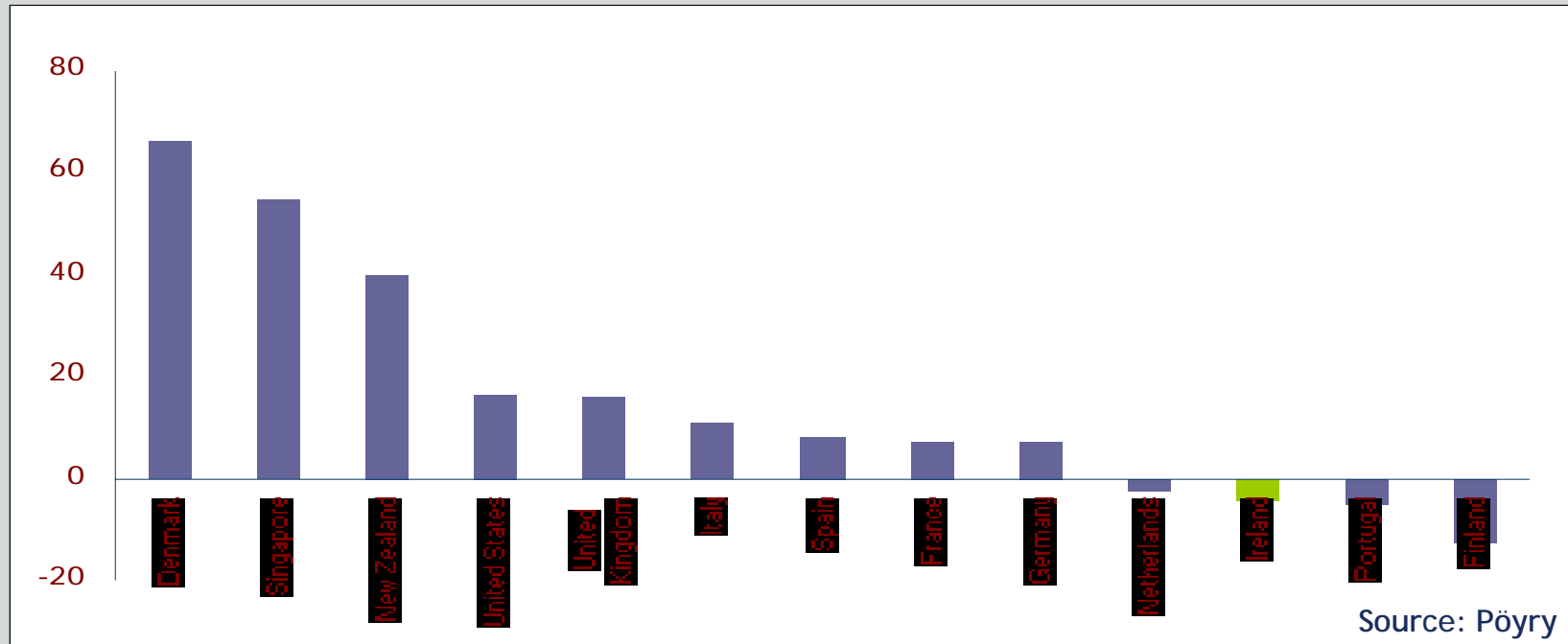
Wholesale Electricity Prices: 2004-2006



Wholesale electricity prices in Ireland have increased significantly over the past three years. Much of this is due to the significant increases in the global price of oil and gas over the period in question.

In 2006, the latest year for which comparable wholesale price data is available, Ireland ranked second most expensive of eleven benchmarked countries.

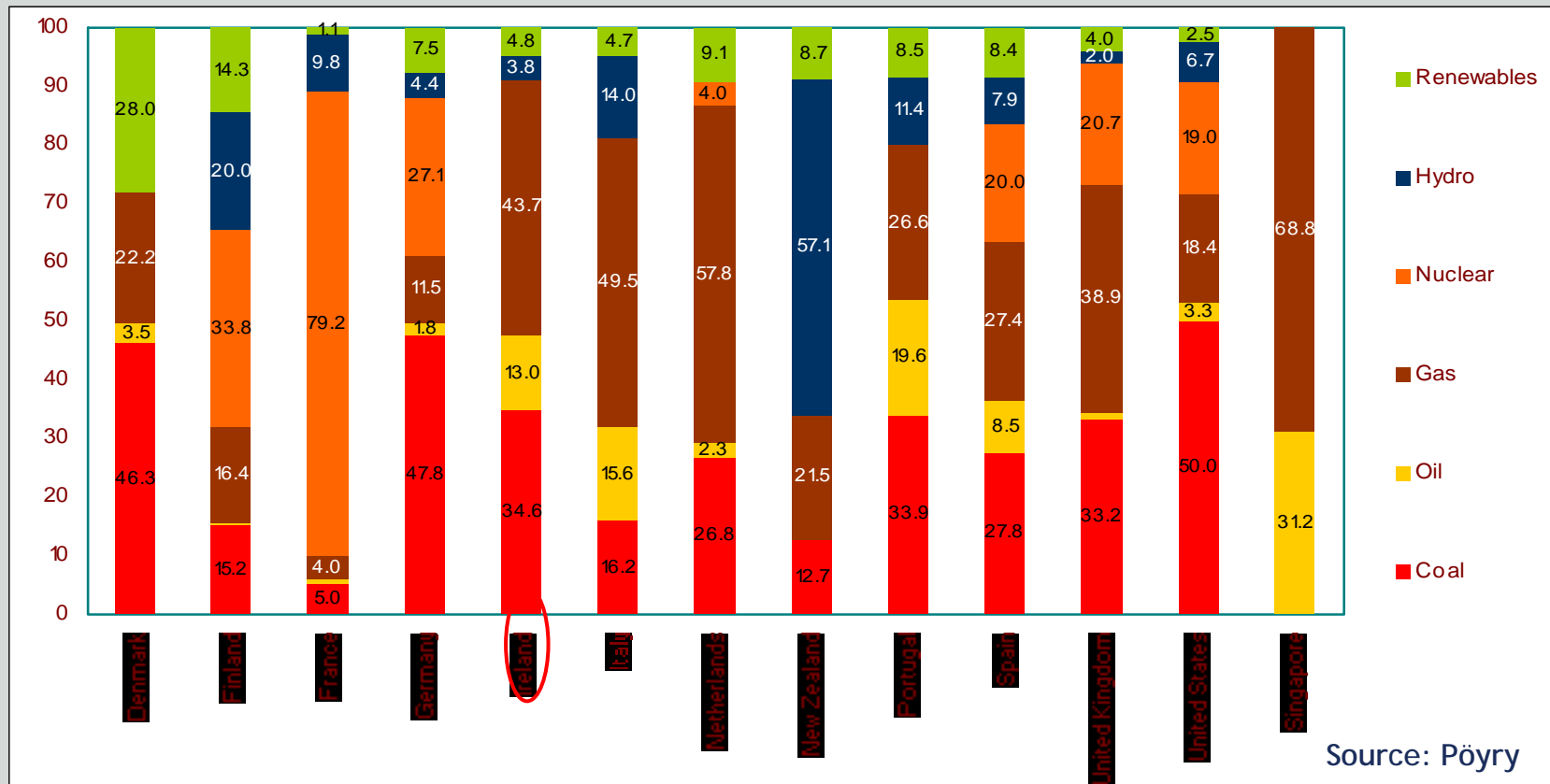
Level of Spare Capacity Over and Above Peak Demand, 2006



The level of spare capacity is the difference between average available capacity and peak demand. For the purposes of this study, demand at peak times (i.e. when demand is highest and therefore the margin is lowest) is used to determine the level of spare capacity. It should be noted that the actual availability during peak time, which is usually December to February, is higher than the average available capacity. Interconnection, which is not included in the calculation of spare capacity for any of the benchmarked countries, will also provide additional capacity to meet peak demand.

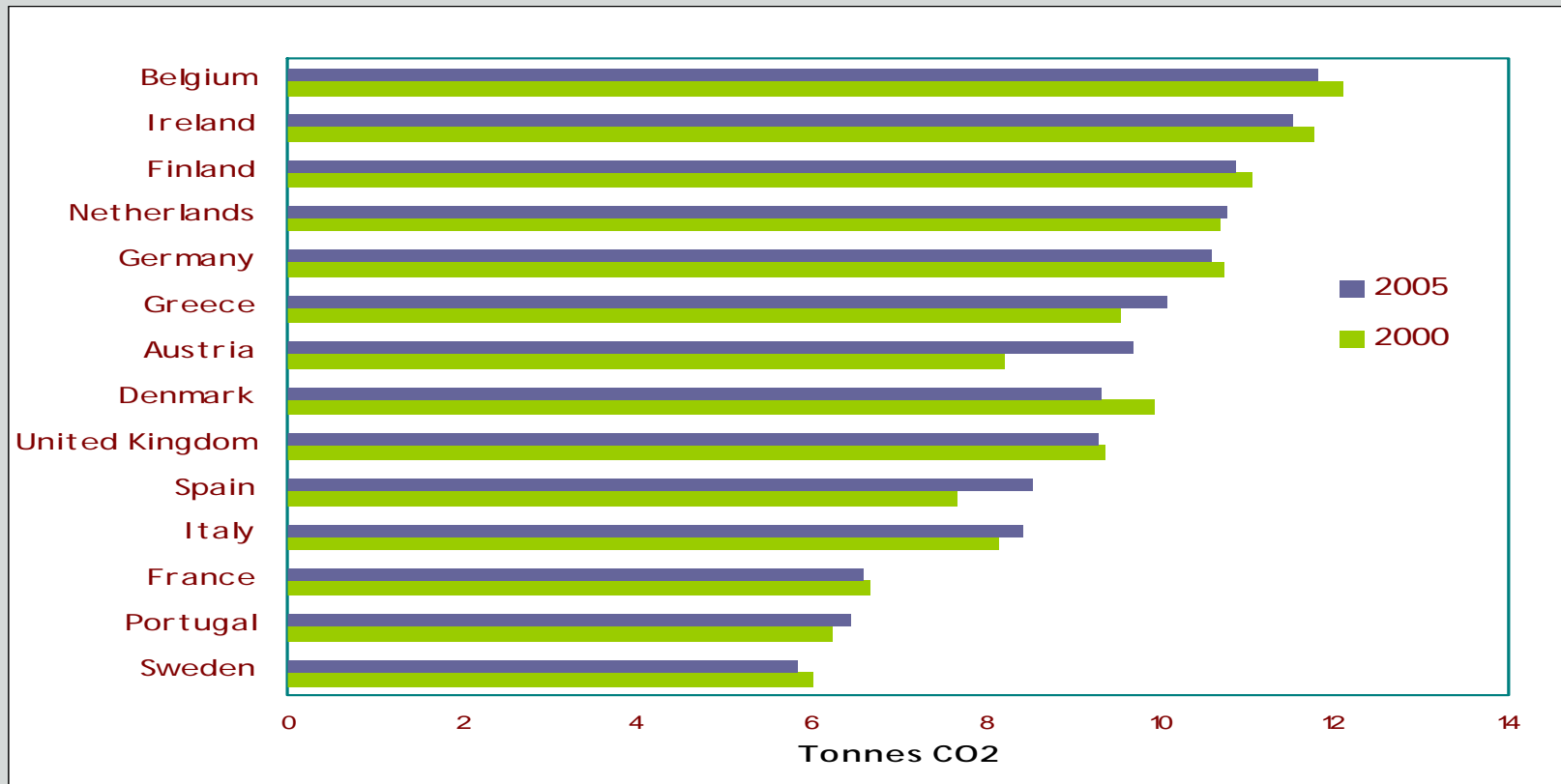
Ireland is one of a number of countries that had a negative level of spare capacity at peak time in 2006. Small electricity markets, like Ireland, tend to have tighter levels of spare capacity than larger ones.

Fuel Mix Shares in Electricity Generation, 2005



Gas, oil and coal make up over 90% of electricity generation in Ireland. In 2005, renewables accounted for 4.8% of electricity generation. A significant increase in the amount of wind connected to the grid increased renewables' share of electricity generation to 8.6% in 2006.

Per capita CO2 Emissions in the EU-15, 2000 vs. 2005



Source: European Environment Agency

On a per capita basis, Ireland had the second highest CO2 emissions of the EU-15 in 2005. Although there has been a decline in the levels of CO2 emissions per capita over the period, (by 2.3%), total carbon emissions in Ireland actually increased by 5.4%; from 44.9 million tonnes in 2000 to 47.3 million tonnes in 2005. Emissions increased by 3.8% across the EU-15 over the same period.

Conclusions and Policy Priorities

Key Conclusions

- ▶ Addressing Ireland's energy issues, and in particular the comparatively higher prices of electricity, is critical for enterprise development. The Government's Energy White Paper sets out actions that will, if implemented in full and within the proposed timeframes, go a long way towards providing Irish businesses with a competitively priced, secure and environmentally sustainable supply of energy.
- ▶ While a number of factors that affect Ireland's performance are outside its direct control, such as global fuel price volatility, there are a number of areas where Ireland can act to improve its performance and support the development of an electricity market that meets the needs of enterprise.
- ▶ The key milestones in the Energy White Paper of greatest importance for enterprise competitiveness are listed overleaf. It is essential that these initiatives are delivered on schedule.

Key Milestones in the Energy White Paper

Key Milestones	Expected Delivery Date
Grid Development Study	End 2007
All-island strategy for grid storage and LNG	End 2007
Full ownership unbundling of the transmission network	End 2008
Development of a landbank of State owned sites	End 2008
<i>New Generation Capacity</i>	
<ul style="list-style-type: none"> • Aghada (430 MW) and Whitegate (400 MW) 	2009 and 2010
<i>Interconnectors</i>	
<ul style="list-style-type: none"> • North-South (approx 350 MW) 	2011
<ul style="list-style-type: none"> • East-West (500MW) 	2012
<ul style="list-style-type: none"> • Cost benefit analysis and feasibility planning for further interconnection to Britain and mainland Europe 	By 2009
<i>Network Infrastructure Investment</i>	2007-2013 (NDP)
<ul style="list-style-type: none"> • Electricity transmission and distribution (€4.9 billion) • Gas network (€1.7 billion) 	
Research investment (€150 million)	2007-2013 (NDP)
Divestment of 1,300 MW by ESB	2010
Implementation of smart metering for households	2012
Energy efficiency targets - national target: 20%	By 2020
<ul style="list-style-type: none"> • Industry target: 20% • Public sector: 33% 	
Renewables targets	
<ul style="list-style-type: none"> • 15% 	2010
<ul style="list-style-type: none"> • 33% 	2020

Policy Priorities for Enterprise Competitiveness

- ▶ Implementing the Energy White Paper actions;
- ▶ Restoring cost competitiveness;
- ▶ Improving generation adequacy;
- ▶ Ensuring diverse sources of supply;
- ▶ Providing adequate regional capacity;
- ▶ Improving energy efficiency; and
- ▶ Energy policy planning for the longer term.