

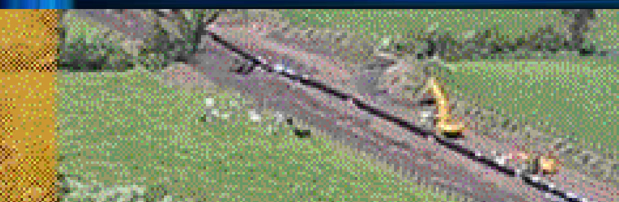
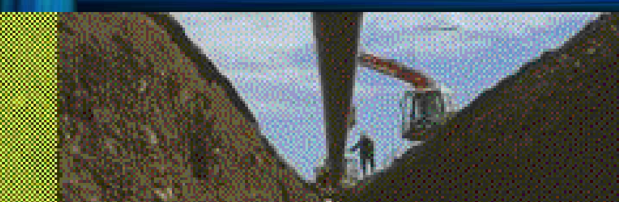
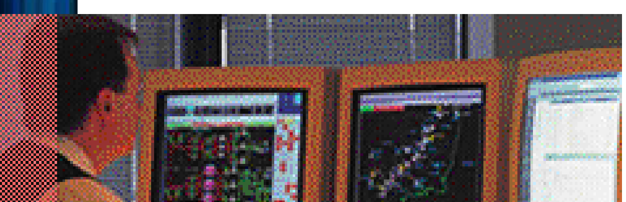

NATURAL GAS – SECURE ENERGY FOR THE FUTURE

IEI EVENING LECTURE

DENIS TWOMEY, COMMERCIAL OPERATIONS MANAGER,
BORD GÁIS NETWORKS

FEBUARY 21ST, 2006

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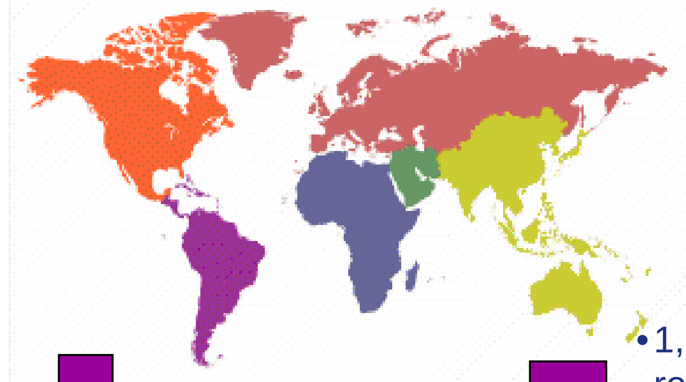
BORD GÁIS NETWORKS

There are significant world reserves of gas, much in politically secure areas …

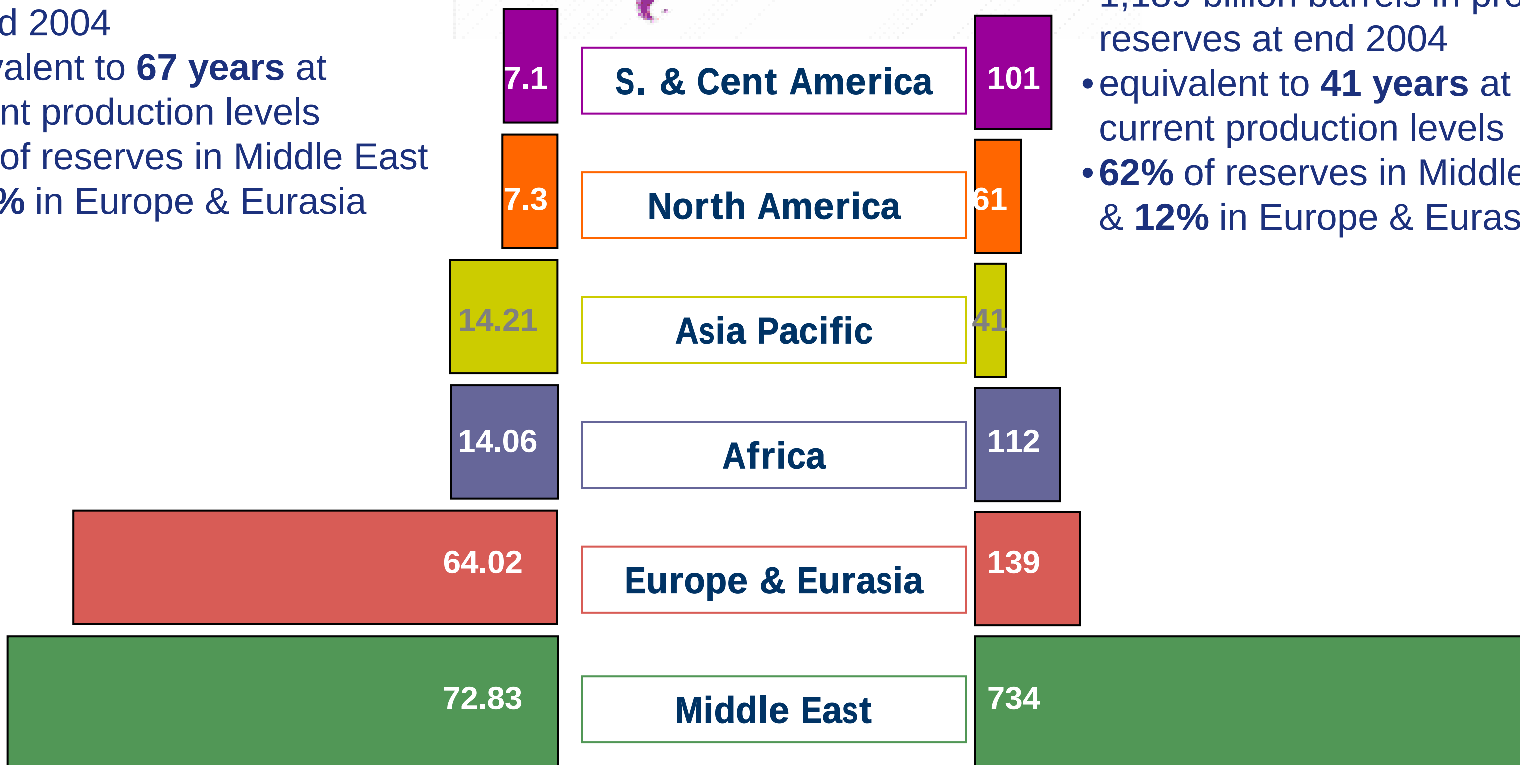


NATURAL GAS

- 179,530 bcm in proven reserves at end 2004
- equivalent to **67 years** at current production levels
- **41%** of reserves in Middle East & **36%** in Europe & Eurasia

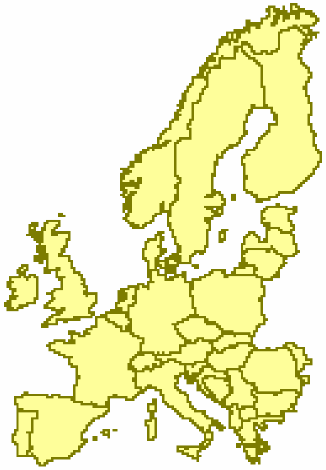
OIL

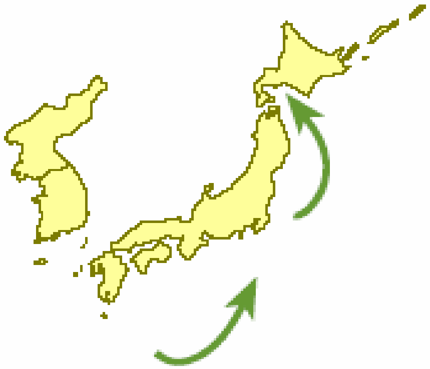
- 1,189 billion barrels in proven reserves at end 2004
- equivalent to **41 years** at current production levels
- **62%** of reserves in Middle East & **12%** in Europe & Eurasia



BORD GÁIS NETWORKS

Gas was a regional commodity. Now a global market is emerging …





- **Gas-to-gas competition**
- **Liquid spot market**

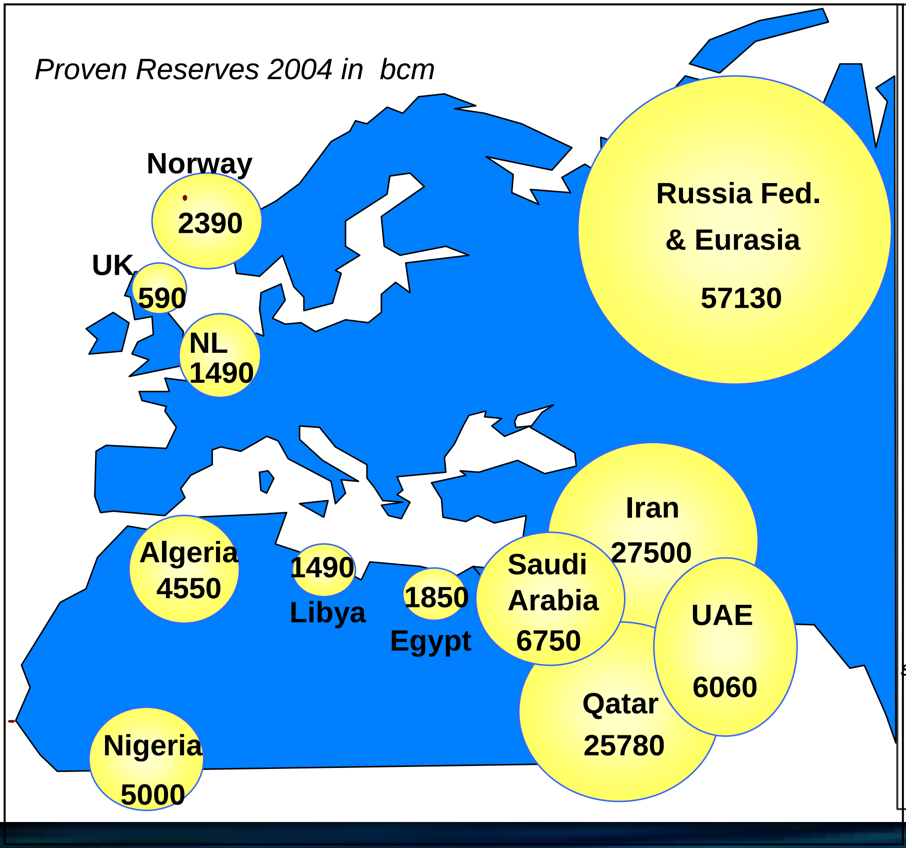
- **Dual price dynamic**
  - — NBP spot
  - — Oil-related contracts

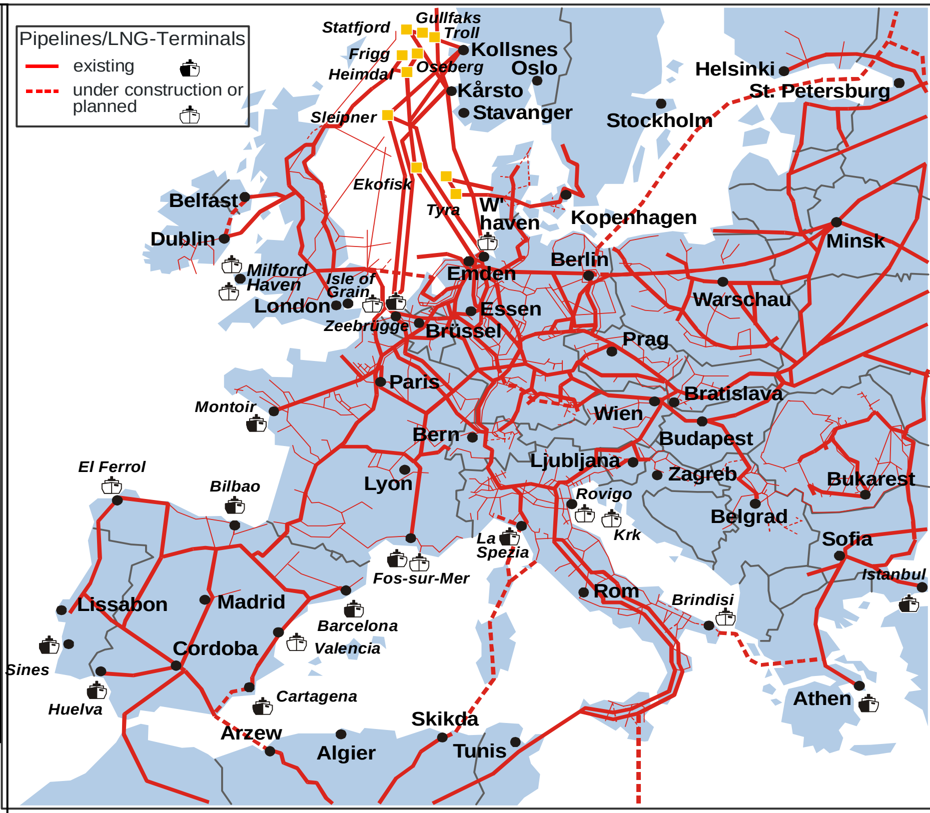
- **Oil linked contracts**

Global LNG Links and Arbitrage

Over one-third of world gas reserves are in Europe and Eurasia …

- Ireland uses c. 4.1 bcm per annum, which is less than 1% of the 466.9 bcm used in the EU 25.
- In 2004 European Countries, including Norway, supplied about 60% of the gas used in Europe. Imports came primarily from Russia and Algeria. Liquefied Natural Gas (LNG) represents about 14% of total EU 25 gas imports.
- The EU is already heavily interconnected with further pipeline and LNG infra-structure being built





BORD GÁIS NETWORKS

Current & Planned Transmission Infrastructure

- *Bord Gáis Networks currently include 1,965km of on-shore Ireland, two sub-sea Interconnectors, Isle of Man spur and North-West pipeline from Belfast to Derry City completed in 2004.*

- *Mayo-Galway pipeline construction commenced in May 2005, 150km to be laid over two seasons for completion by autumn 2006, to facilitate delivering Corrib gas into grid.*

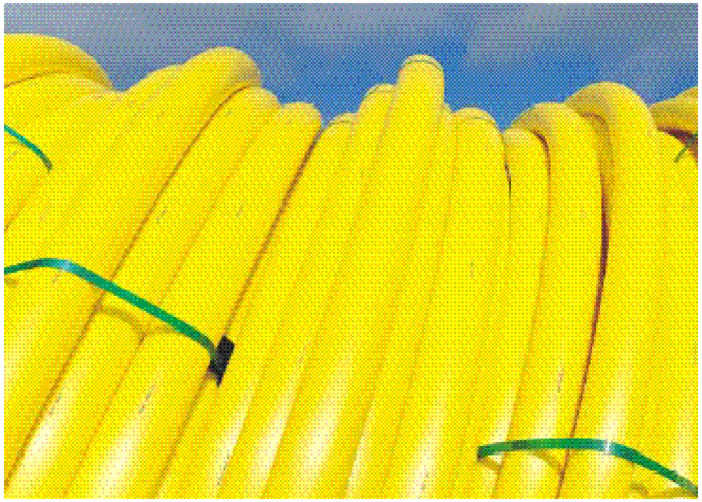
- *South-North pipeline of 155km from Gormanston in Co. Meath to Belfast is scheduled for construction during 2006 with completion by October 2006, linking gas grids North & South.*

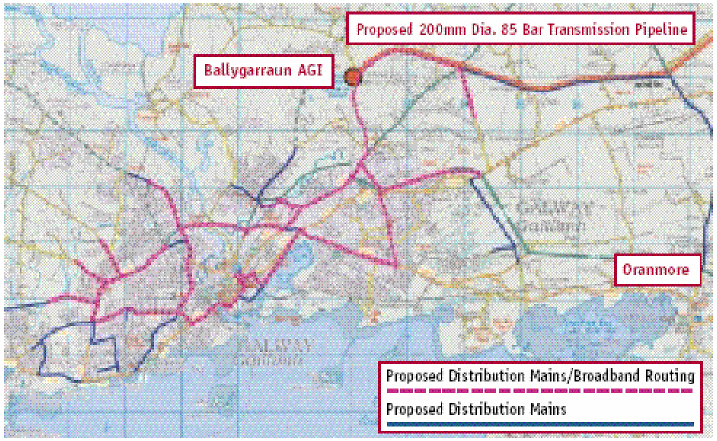
- *PTL own SNIP, with BGE awarded contract to operate for 3 years*

- *Phoenix own and operate transmission infrastructure adjacent to their network*

Current & Planned Distribution Infrastructure

- ***Bord Gáis Networks currently includes 8,915km of Distribution networks.***
- ***Natural Gas is available in over 100 population centres in 17 counties in Ireland, with over 500,000 gas users***
- ***Five new towns connected to Network and almost 40,000 new residential and 1,000 commercial gas users were added in 2004***
- ***New connections are subject to economic test, policy currently under review***
- ***BGE was awarded the licence to supply gas to towns along the pipeline routes in NI, construction roll-out started in 2005 with first customers now connected***
- ***Phoenix has over 2,650 km of gas pipelines in Greater Belfast area and serves over 93,000 gas customers***





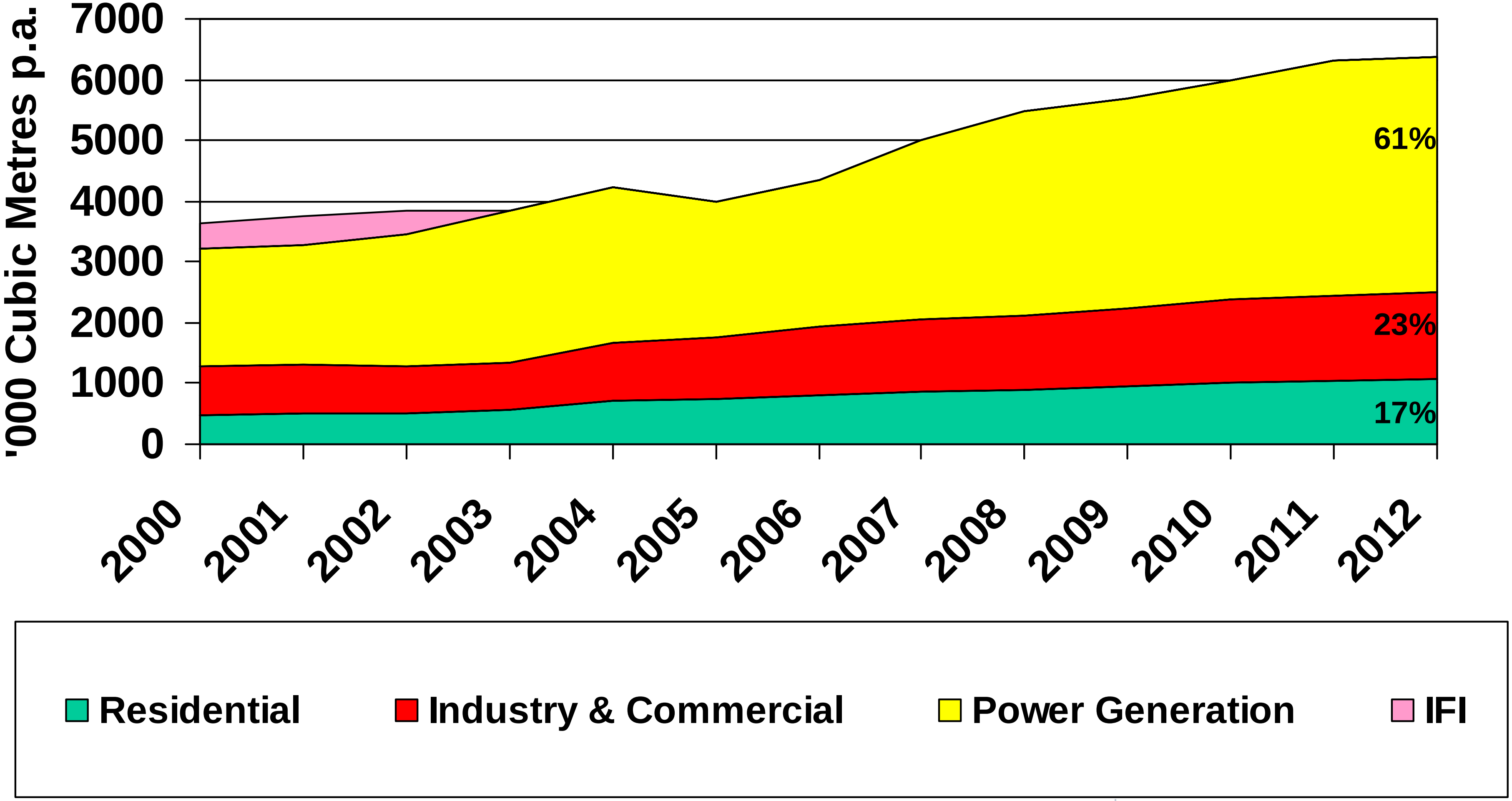
Current Commercial & Operational regimes

The regimes in both jurisdictions have developed separately reflecting local market conditions. Significant recent developments include:

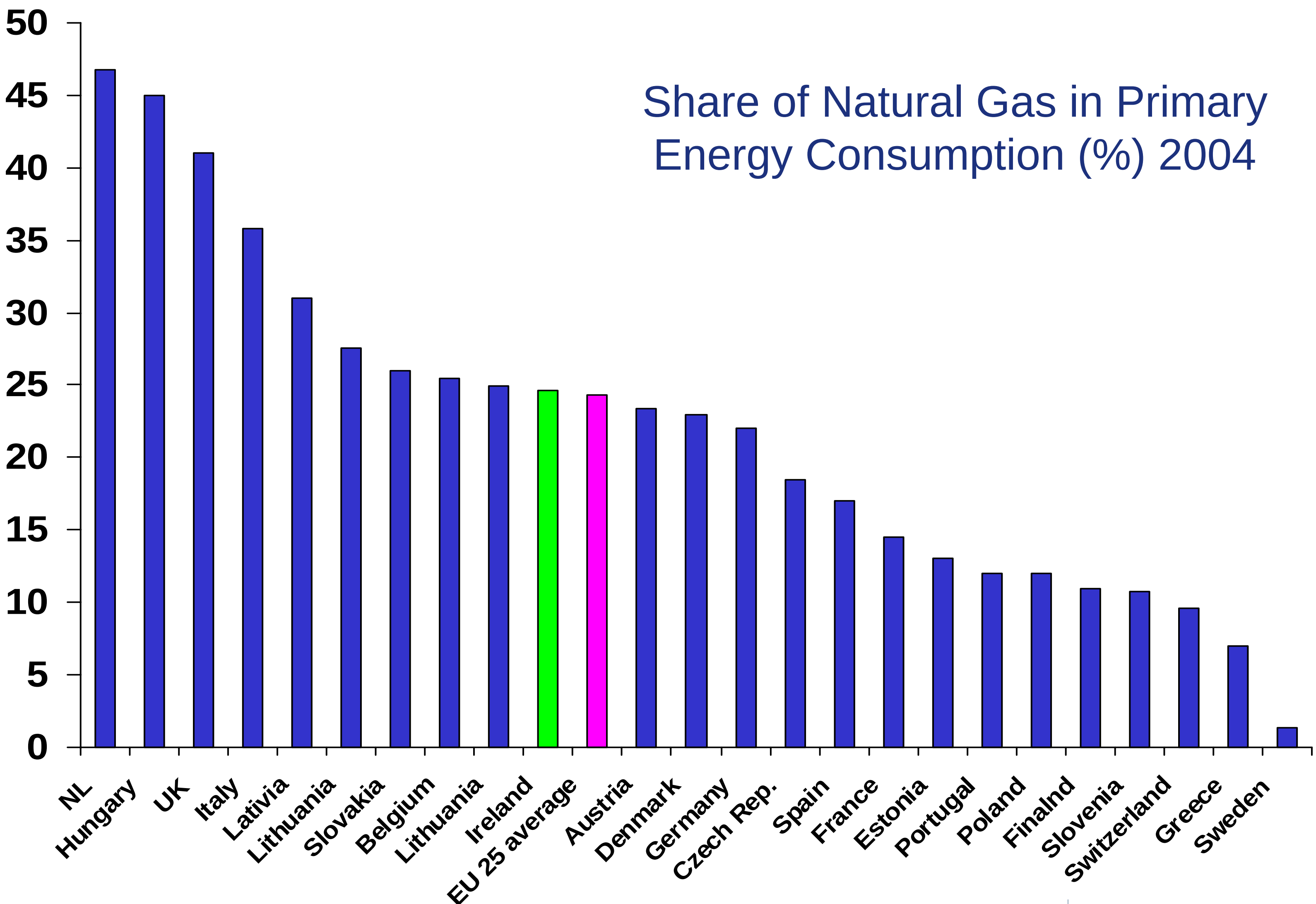
- **Northern Ireland**
  - **Introduction of Postalised Transmission Tariff in NI among three pipeline owners**
    - Required changes to contractual terms and licences, and new processes e.g. Common Fund
    - Facilitated gas to Coolkeeragh & towns along routes
  - **Mutualisation of SNIP**
    - Required stronger regulatory underpinning of risk
    - Facilitated lower tariffs – lower capital returns, projected lower opex
  - **Market Developments**
    - Market open to 75,000 therms level in Greater Belfast area
    - BGE bringing gas to ten new towns along routes of new pipelines

- **Republic of Ireland**
  - **Entry/Exit transportation regime**
    - More flexibility for shippers
    - Facilitates sale of gas at IBP
  - **Unified Code of Operations for Transmission & Distribution**
    - Streamlined service to shippers, e.g. single code
  - **Market Developments**
    - Market open to non-household level, plans developed for full market opening due mid 2006

Gas demand is expected to grow, with power generation being a key component [CER Capacity Statement 2005]



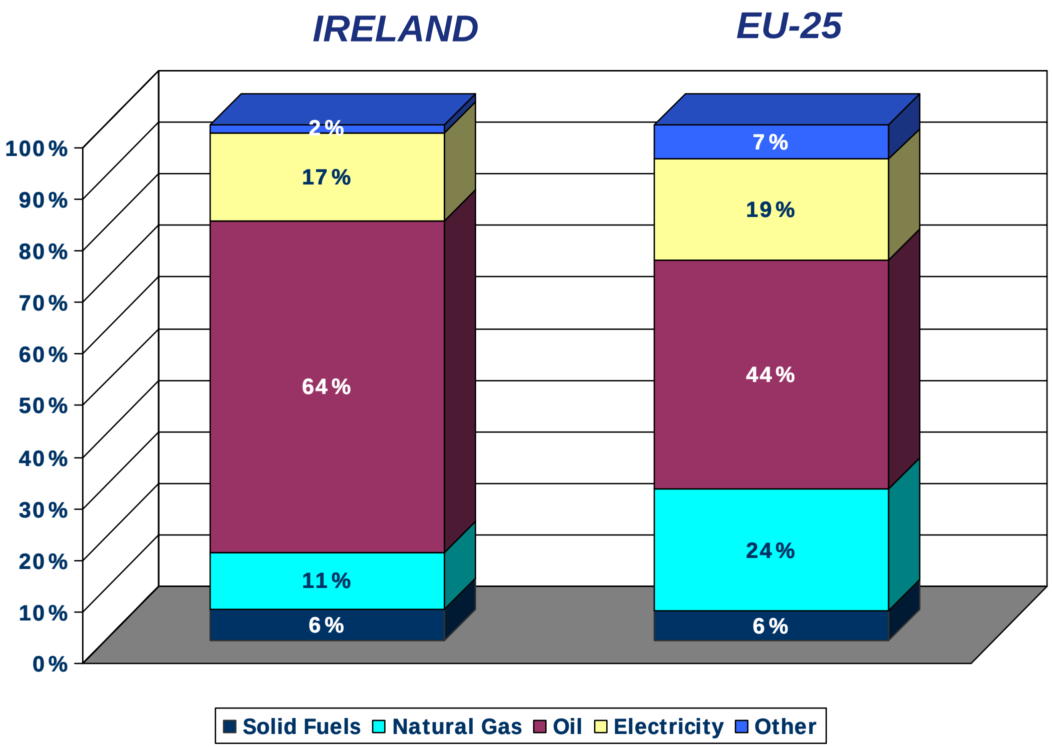
The share of natural gas in Ireland at c. 25% of Primary Demand is in line with the EU average…



Role of Gas in Irish Fuel Mix

- There has been commentary on 'over-dependence' of gas in Ireland. Some facts….
- In 2004, Gas accounted for 11% of final energy demand, compared to an EU average of 24%.
- By the end of 2004, 60% of total gas was used for power generation, 24% by the commercial and industrial sector and 16% by the residential sector.
- Ireland's current and projected levels of gas usage do not appear excessive against EU comparators
- There's scope for further growth… which will bring tariffs down. As gas Transporter, we encourage gas growth.

FINAL ENERGY DEMAND 2004



Source: SEI, Eurogas

Security of Gas Supplies

Security of Gas Supplies depends on:

- **Infrastructure Capacity being adequate**
- **Diversity and Volumes of supply being available**
- **Confidence in long-term pricing**

We believe that measured against each of the above criteria, gas users in Ireland can be confident regarding security of gas supplies. So there shouldn’t be any reticence about increasing utilisation of gas from a security of supply perspective.

- **Infrastructure Capacity:**
  - CER produces annual Gas Capacity Statement
  - Has concluded that there is sufficient capacity in the current transmission system to allow reasonable expectations of demand to be met in medium term and we concur. Capacity is available on a firm and reliable basis throughout the year.

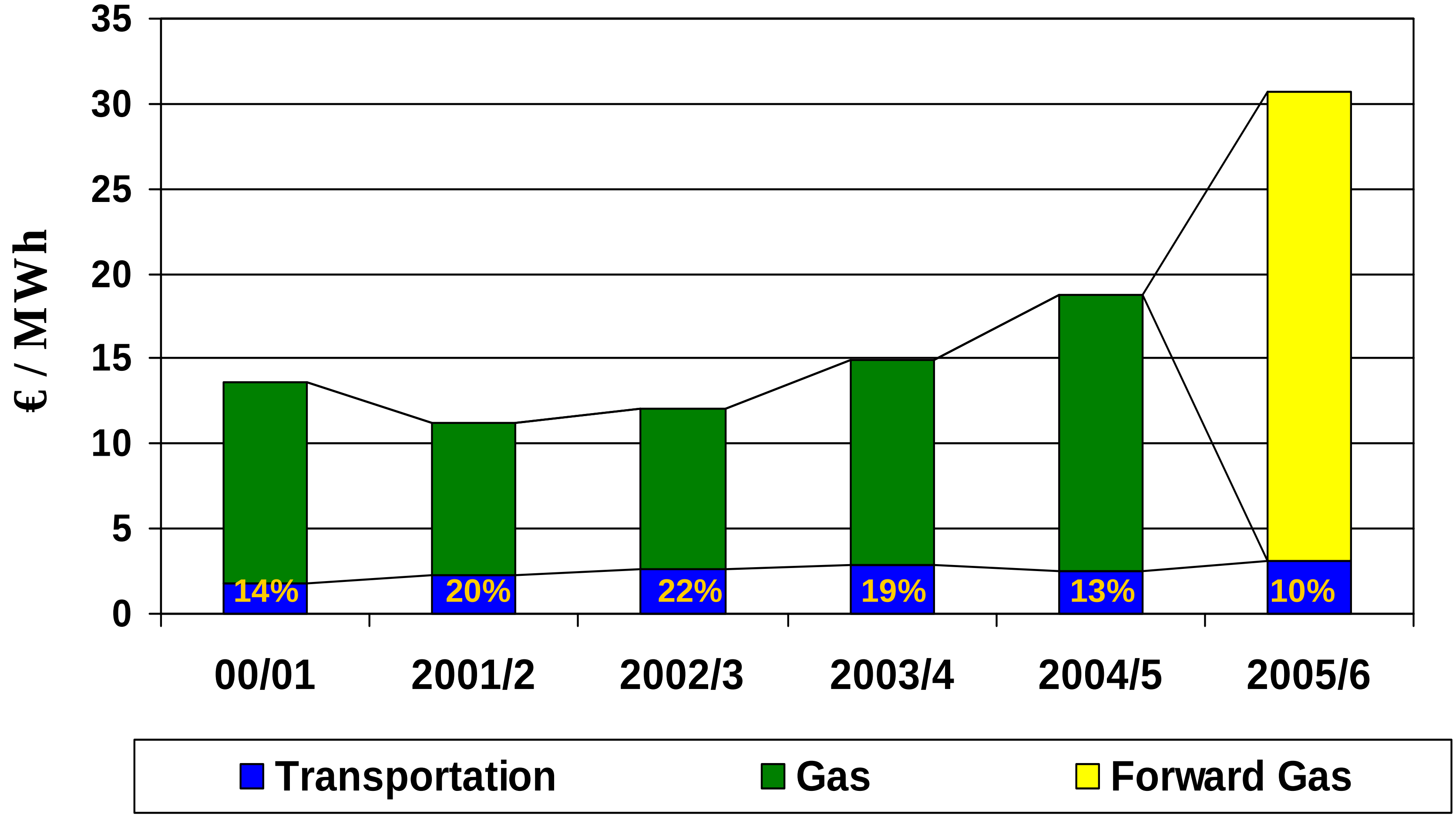
- **Diversity and Volumes of Supply:**
  - Ireland’s gas supply infrastructure has a robust configuration. The construction of the South-North pipeline will also add to this robustness of the all-Island system
  - The development of the Corrib gas field will further enhance the security of gas supplies
  - The source of longer-term supplies is becoming clearer, with investment in additional import capacity to the UK, enabling access to currently remote or stranded gas fields, and including LNG facilities giving diversity of sources and security of volumes.

ENHANCING SECURITY OF SUPPLY

- INFRASTRUCTURE ADEQUATE FOR CURRENT DEMAND
- DEVELOPMENT OF THE CORRIB FIELD COULD MAKE A BIG CONTRIBUTION
- TWINNING OF SINGLE SECTION OF PIPELINE IN SCOTLAND, TIMING DEPENDENT ON CORRIB PROJECT
- HOT SWITCHING FOR POWER GENERATION STATIONS
- INTERCONNECTOR SYSTEM CAN BE UPGRADED AT LOW MARGINAL COSTS TO DELIVER ADDITIONAL ENERGY CAPACITY
- DEVELOPING A BROADLY DEFINED SECURITY OF SUPPLY STANDARD
- THEREFORE THE INCREASING USE OF GAS IN POWER GENERATION, IN LINE WITH EU TRENDS, SHOULD NOT CAUSE UNDUE CONCERN

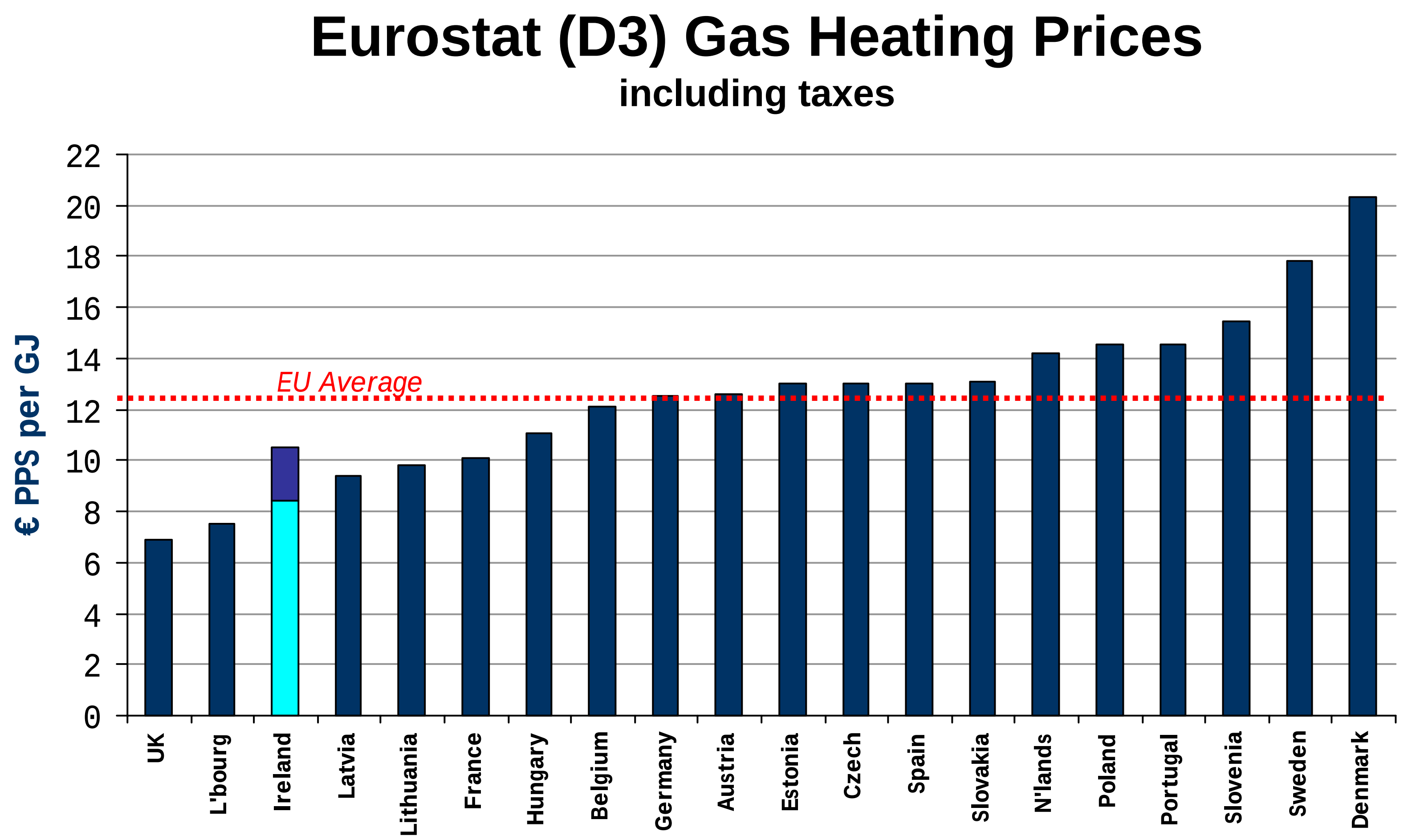
GAS PRICING

The final price of gas is made up of a transportation charge plus commodity …



Households: Natural Gas prices July 2005*

average usage 83.7 GJ/23,260 kWh/786 therms



** Prices expressed in Purchasing Power Standards and including taxes*

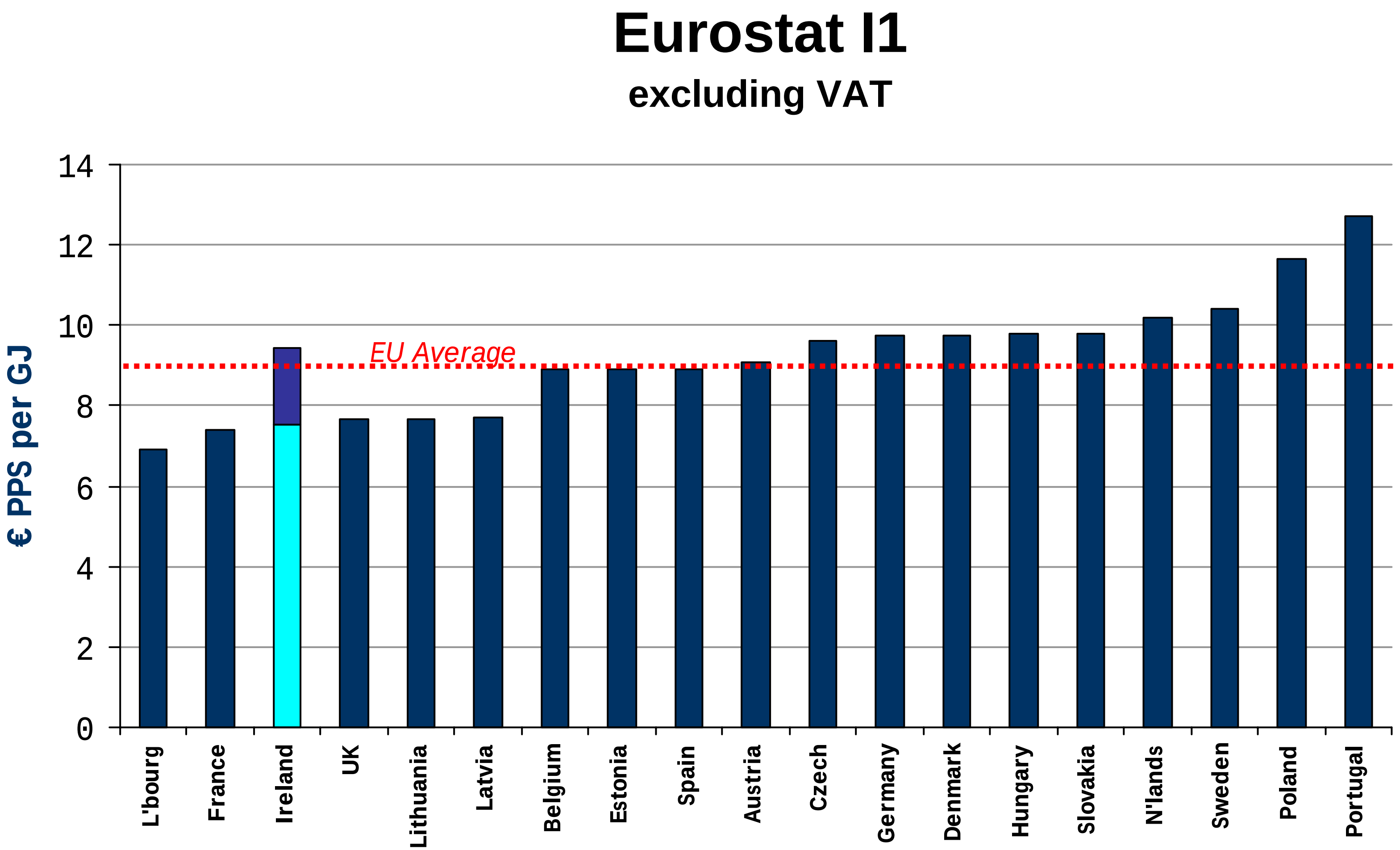
** Ireland's prices include 25% increase in October 2005 – price increases in other countries since July 2005 are not recorded here*

Source: Eurostat

BORD GÁIS NETWORKS

Small Business: Natural Gas prices July 2005*

average usage 418.6 GJ/0.1163 GWh/3.968 therms - no load factor



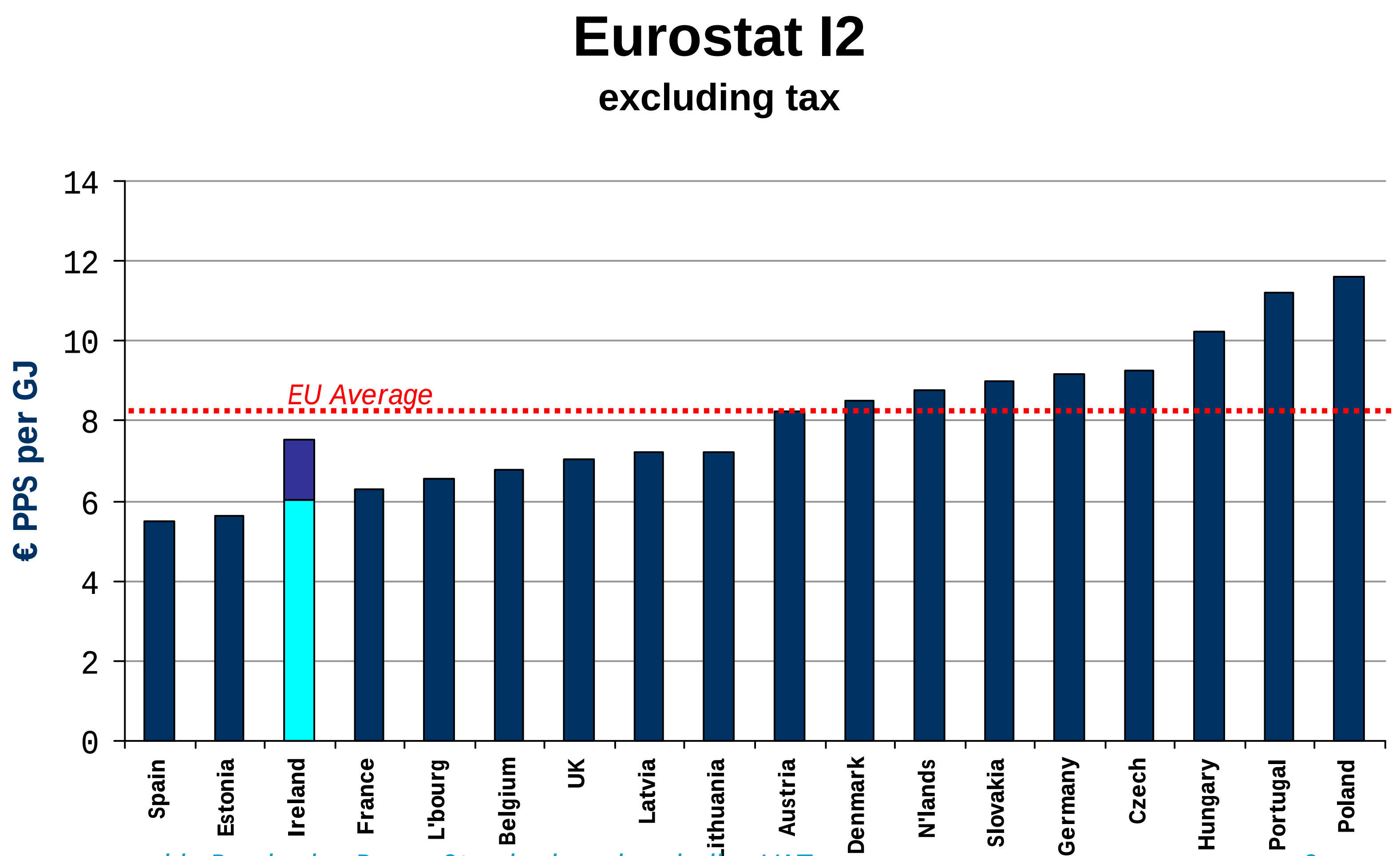
Prices expressed in Purchasing Power Standards and excluding VAT *Source: Eurostat*

** Ireland's prices include 25% increase in October 2005 – price increases in other countries since July 2005 are not recorded here*

BORD GÁIS NETWORKS

Medium Business: Natural Gas prices July 2005*

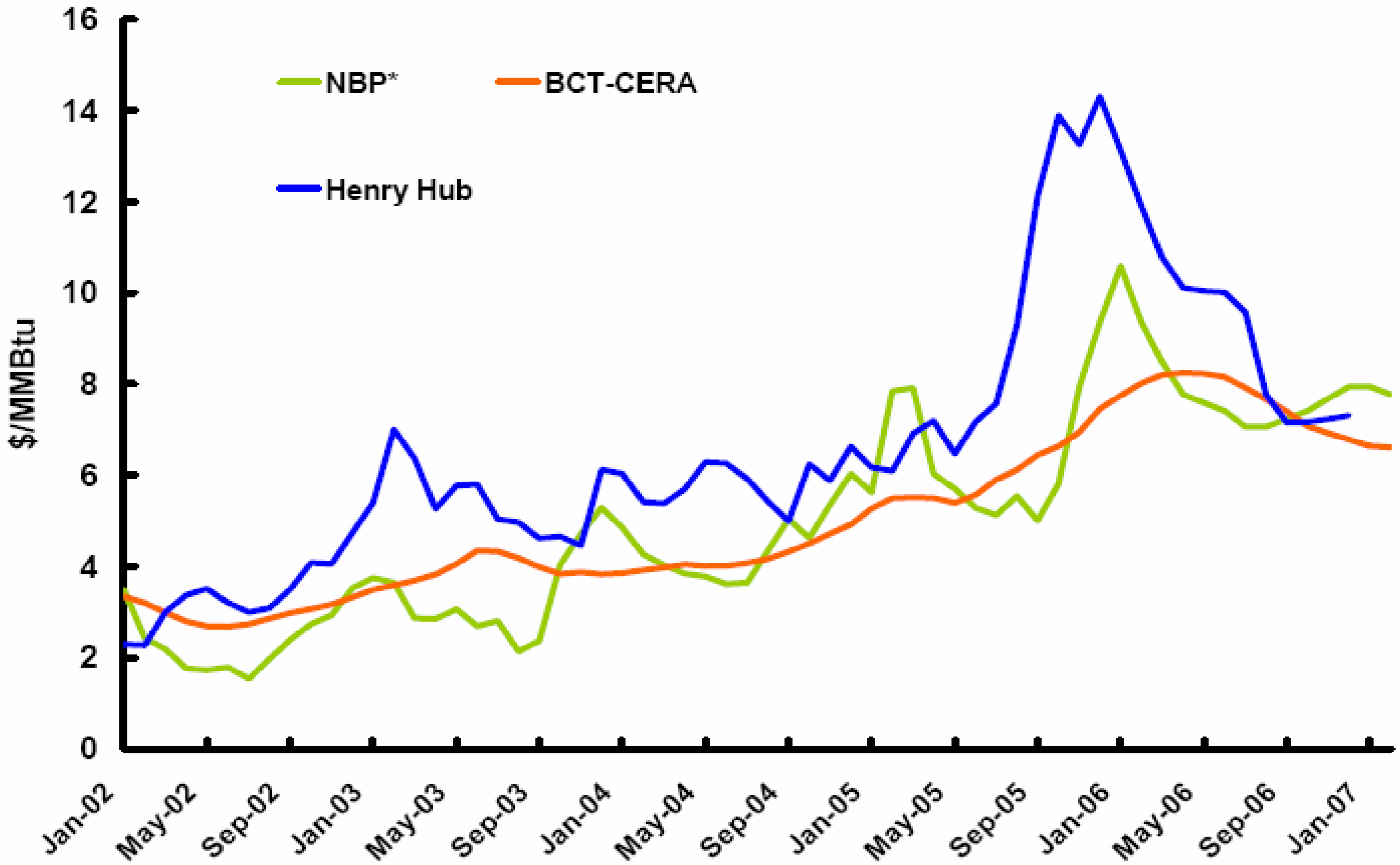
average usage 4,186 GJ/1.163 GWh/39,679 therms - 200 days modulation



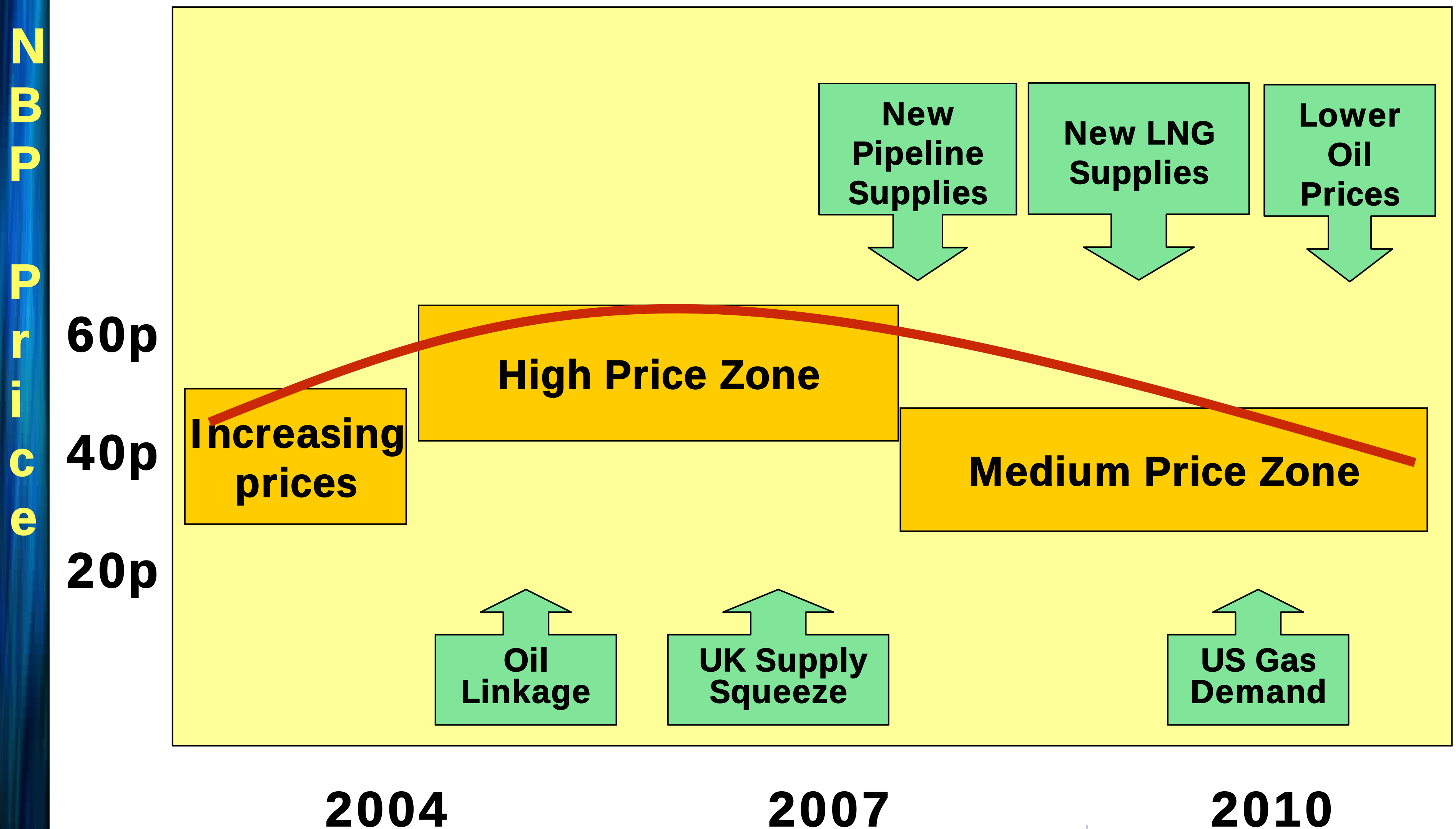
Prices expressed in Purchasing Power Standards and excluding VAT *Source: Eurostat*

** Ireland's prices include 25% increase in October 2005 – price increases in other countries since July 2005 are not recorded here*

The UK (NBP) increase in gas prices has been experienced on the Continent and even more so in the US …

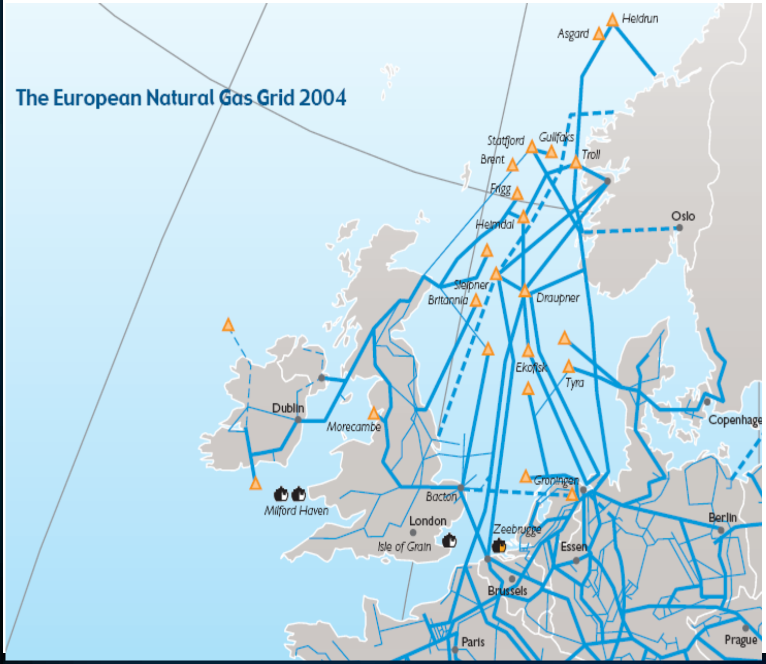


However, we expect various market forces will put downward pressure on prices in the medium term …



UK Gas Supply Sources

- The availability of gas supplies from the UK or markets further afield is important to the Irish gas market, as long-term gas supplies are most likely to be delivered to Ireland through our Interconnectors with the UK.
- This availability depends both on the level of gas reserves and the adequacy of gas transportation or storage infrastructure.
- Using c. 100 bcm of gas per annum, the UK is the largest gas market in the EU. By 2010, imports are expected to account for 40%-50% of UK demand. This projected demand for imports has led to numerous new import infrastructure projects being planned, currently totalling over 100 bcm per annum capacity.
- These projects remove any disconnect between UK & European markets. Ireland has strong interconnectivity with the UK and therefore Europe.

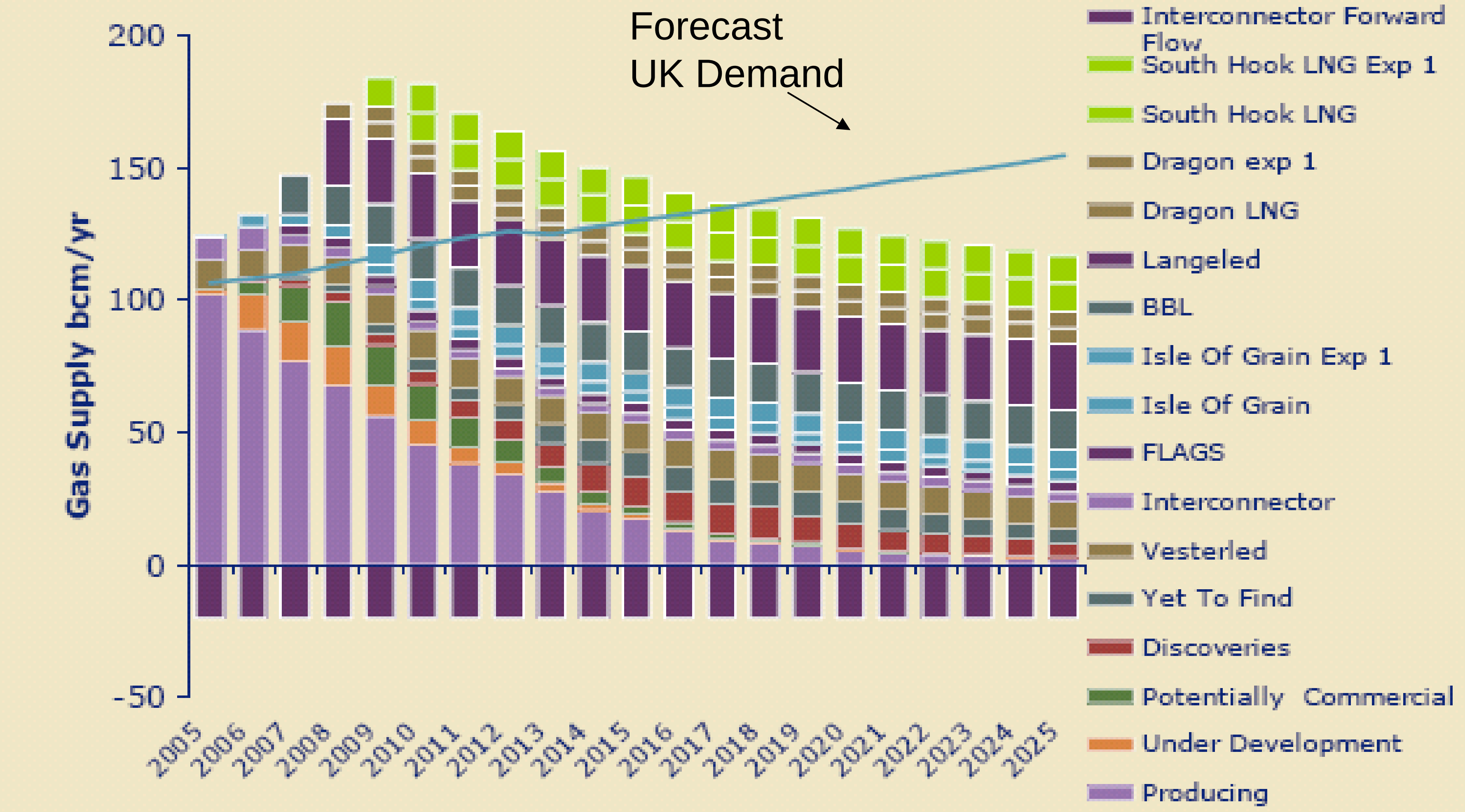


UK: Planned New Gas Supply and LNG Projects

Project	*Operator*	*Route*	*Import Volume*	*Expected Completion*
Ormen Lange field	Norsk Hydro/Shell/Statoil	Ormen Lange (Norway) to Easington	20	2006/7
Statfjord field	Shell/ExxonMobil	Statfjord (NY) to St. Fergus	4	2006
Interconnector compression	Interconnector-UK	Zeebrugge (BL) to Bacton	+20	2006
Bacton-Balgzand Line	Gas Transport Services	Balgzand (NL) to Bacton	16	2007
Isle of Grain (2 phases)	NGT	LNG Import facility	5-15	2005-08
Milford Haven	Petroplus/BG	LNG Import facility	6	2007
Milford Haven	ExxonMobil/Qatar Pet.	LNG Import facility	20	2007
North European Pipeline	Gazprom/E.On	Russia via continental Europe to Bacton	20-30	post- 2010
TOTAL			*125 bcm*	

Positive outlook on UK Demand Supply Position over the next few years …

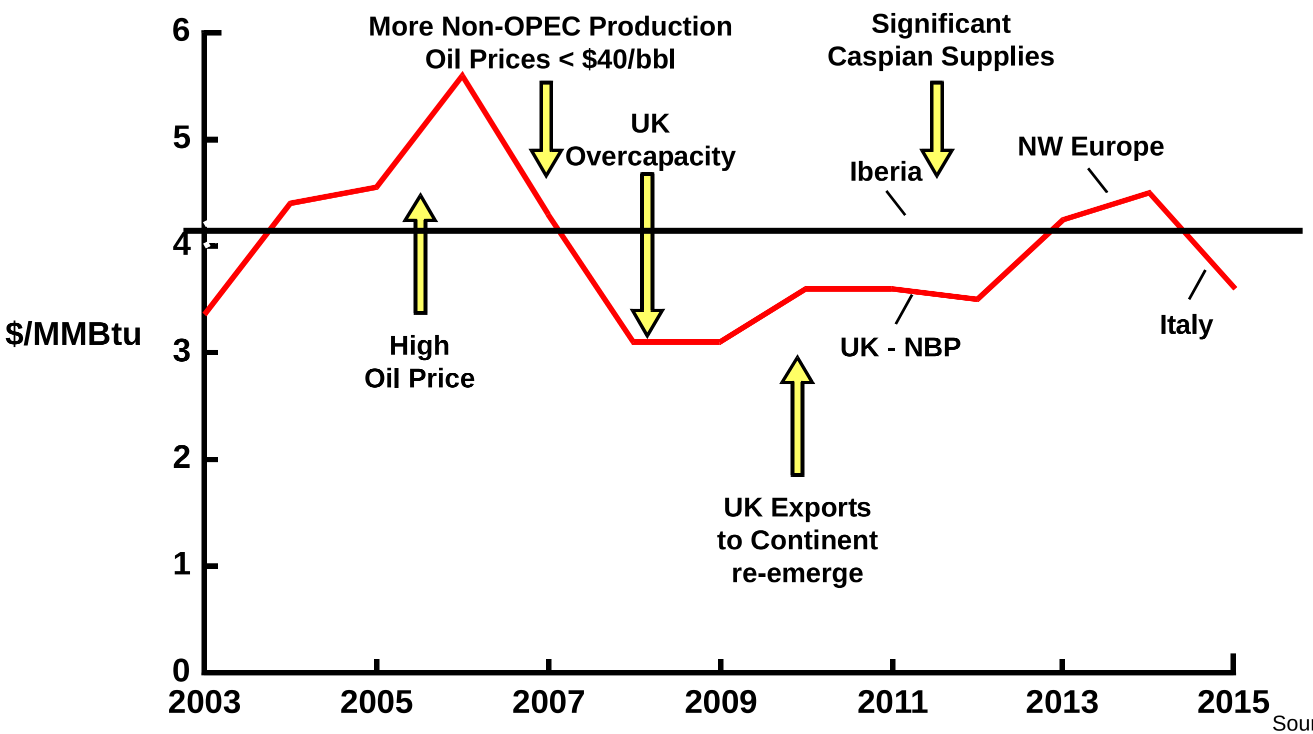
Impact of gas imports on UK picture – Interconnector in forward flow



Source: Deloitte Petroleum Services & Transco 10 Year Statement

Wholesale Gas Prices

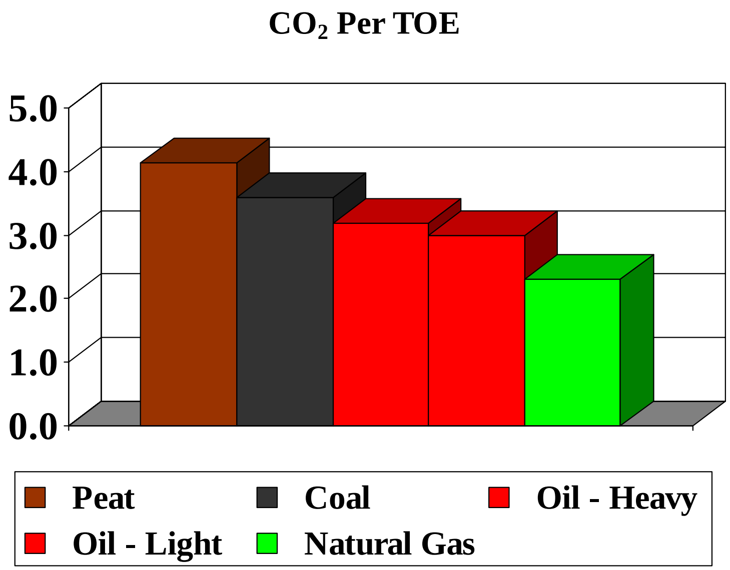
- Many LNG & Pipeline projects being developed
- LNG projected to account for one-third of supply capacity to western Europe by 2012
- Middle East LNG can reach virtually all markets for c. US$4/mmbtu (22p/therm)
- Expectation that this will effectively be price limit for pipeline gas in longer-term
- New investment in pipes and LNG gives strong security of supply volumes and diversity of sources
- Short-term demand/supply squeeze in UK will ease over next few years



Source: Cambridge Energy Research Associates.
50501-37

Finally, in environmental terms natural gas is the cleanest fossil fuel with low carbon emissions …

- Natural gas is by far the cleanest fossil fuel and is a major contributing factor in the reduction of atmospheric emissions of pollutants such as:
  - sulphur dioxide
  - nitrogen oxides and
  - smoke
- Carbon dioxide emissions from natural gas are up to 30% less than oil and 50% less than coal - for the same energy input
- CCGT units - 50% greater efficiency compared with 37% for coal
- Greenhouse gas emissions for Ireland are 29% above 1990 levels.
- Greater utilisation of gas will contribute to meeting the Kyoto targets and also reduce the total cost of carbon permits



GOING FORWARD

SECURITY OF SUPPLY

- EU has economic access to significant long term sources
- Ireland has adequate gas infrastructure
- Ireland's gas dependence in line with EU average
- Corrib can make a big contribution
- Complete twinning of pipeline in Scotland, timing to depend on Corrib
- Generators to retain back-up fuel stocks as per licences
- Joint approach to gas and electricity security and emergency planning

PRICES

- Remaining high near term
- Prospects for reductions in the medium term due to developing pipeline and LNG infrastructure in the UK and wider EU
- Gas prices will be a key influence on Irish and European power prices for the foreseeable future

ENVIRONMENT

- Greater gas utilisation contributes to energy efficiency and to the environment

Questions and Discussion