



# European Gas Market(s) and Regulation/Liberalisation

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President International Gas Union  
SGOA Autumn Conference  
Bratislava, 3 November 2005



# INTERNATIONAL GAS UNION

Covers >95 % of World Gas Sales  
'Spokesman' of the Gas Industry



[www.IGU.org](http://www.IGU.org)



Non Members



Membership from 67 countries and 20 Associated Members



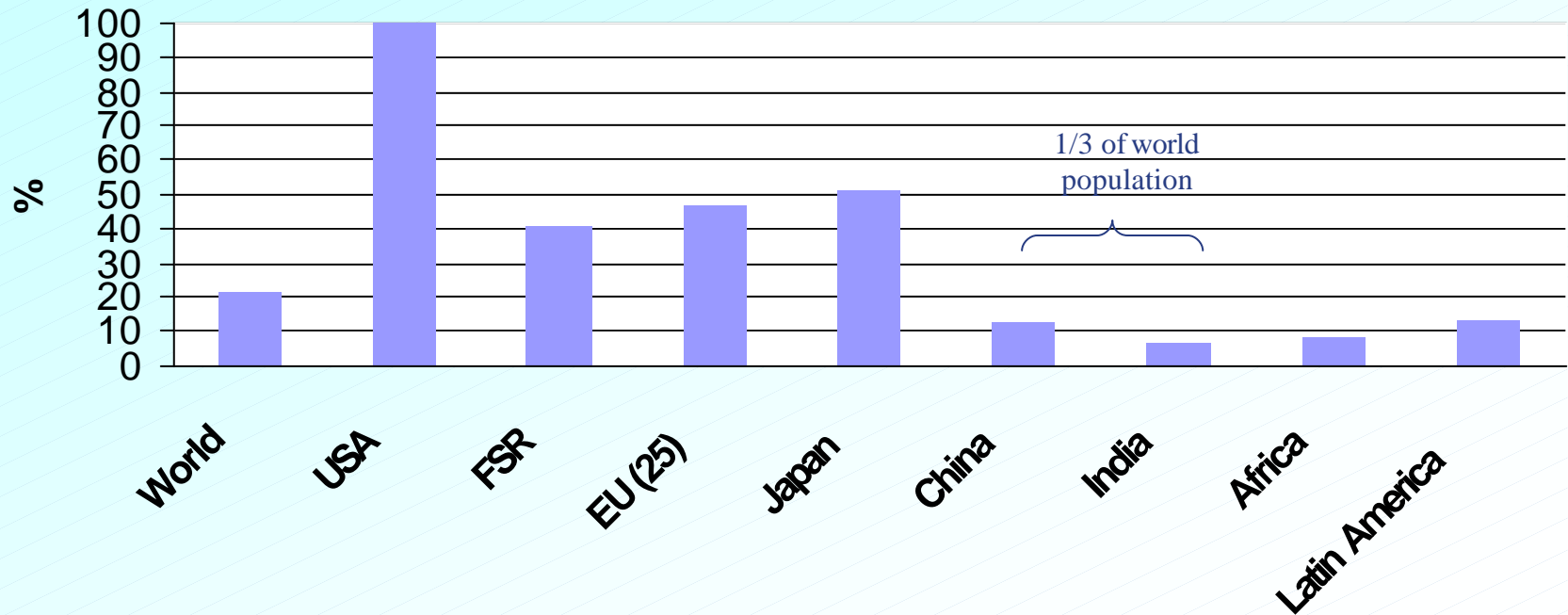
# Themes for Today

- **The World needs Energy;**
- **At What Prices?**
- **LNG changes the Global Gas Scene;**
- **Regulation, Liberalization.**



# Energy Consumption in Perspective

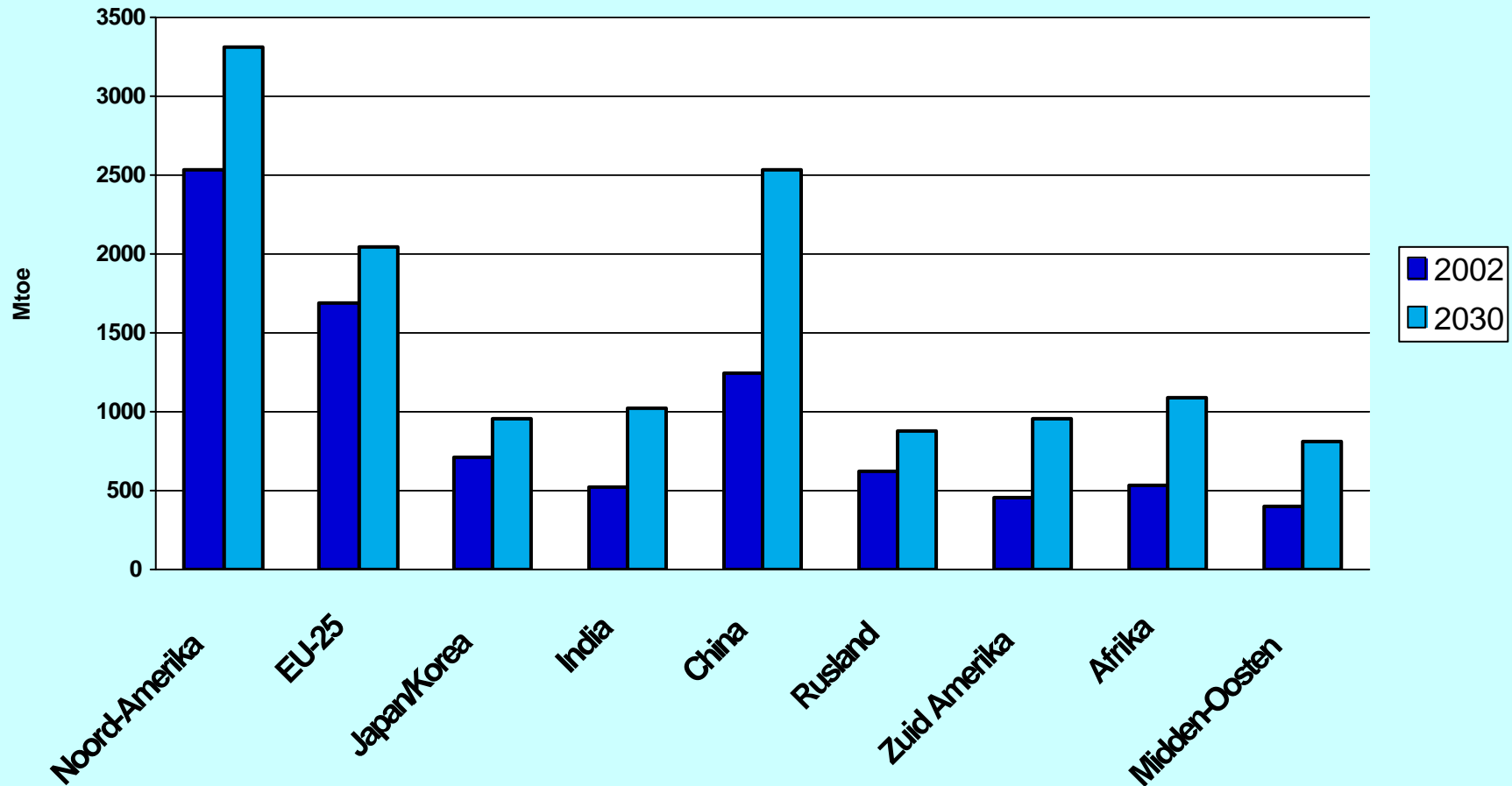
primary energy consumption per capita  
relative to USA



IEA data year 2002



# Total Energy Demand by Region 2002 and 2030

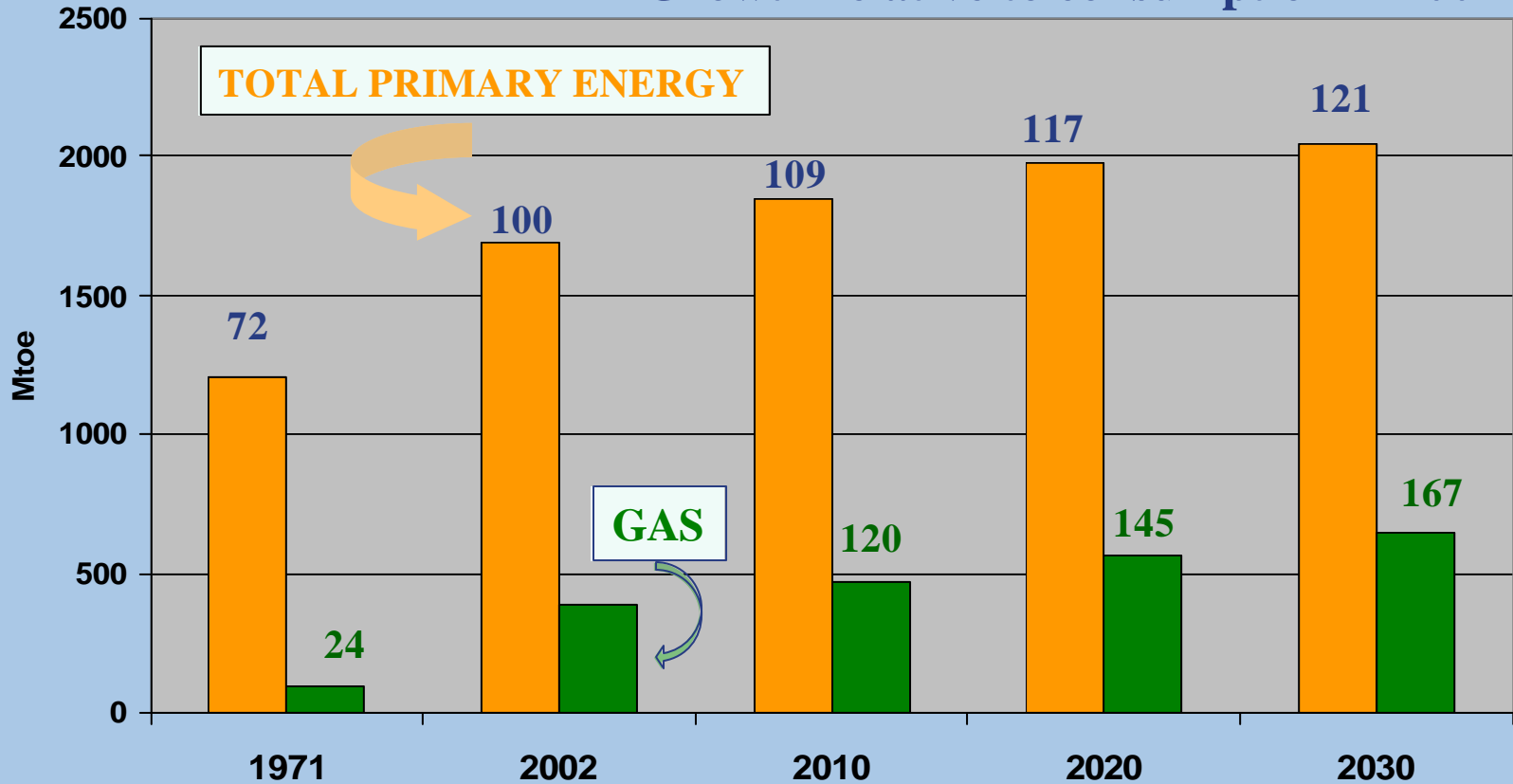




# EU Energy Demand Forecast IEA

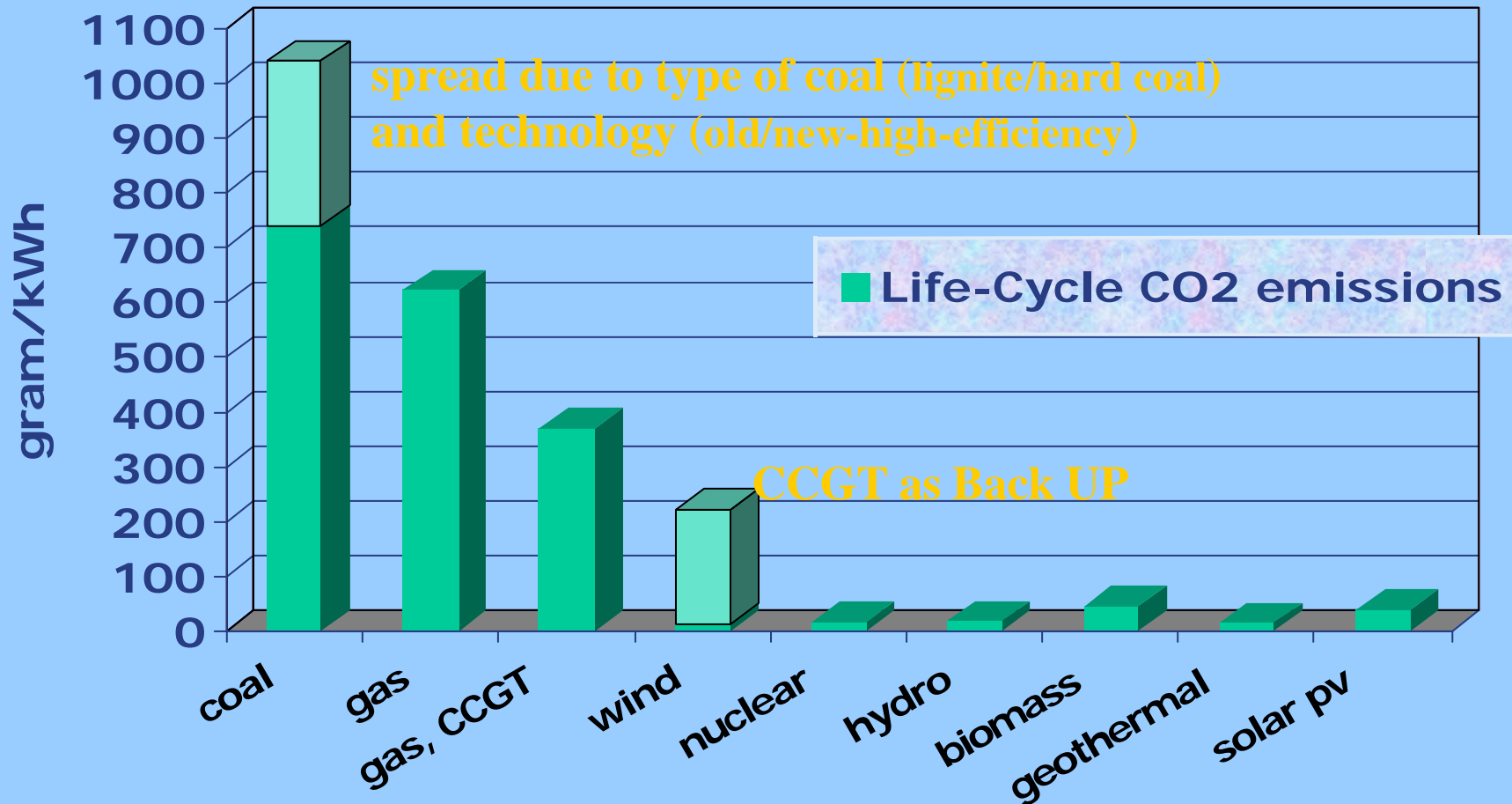
## EU (25)

Growth relative to consumption in 2002





# CO<sub>2</sub> emission from Power Plants



Sources: life-cycle assessment of electricity generation systems and applications for climate change policy analysis, Weier, 2002, published on website Nuclear Energy Institute; own data; IEA



# Gas the Fuel of Choice

- For financial-economic reasons,
- For environmental reasons,
- For space planning reasons (gas fired power station needs a lot less space than a coal fired one)
- For cooling water requirements (gas fired power stations need a lot less cooling water than coal fired ones or nuclear)

***Natural Gas will be the fuel of choice!***





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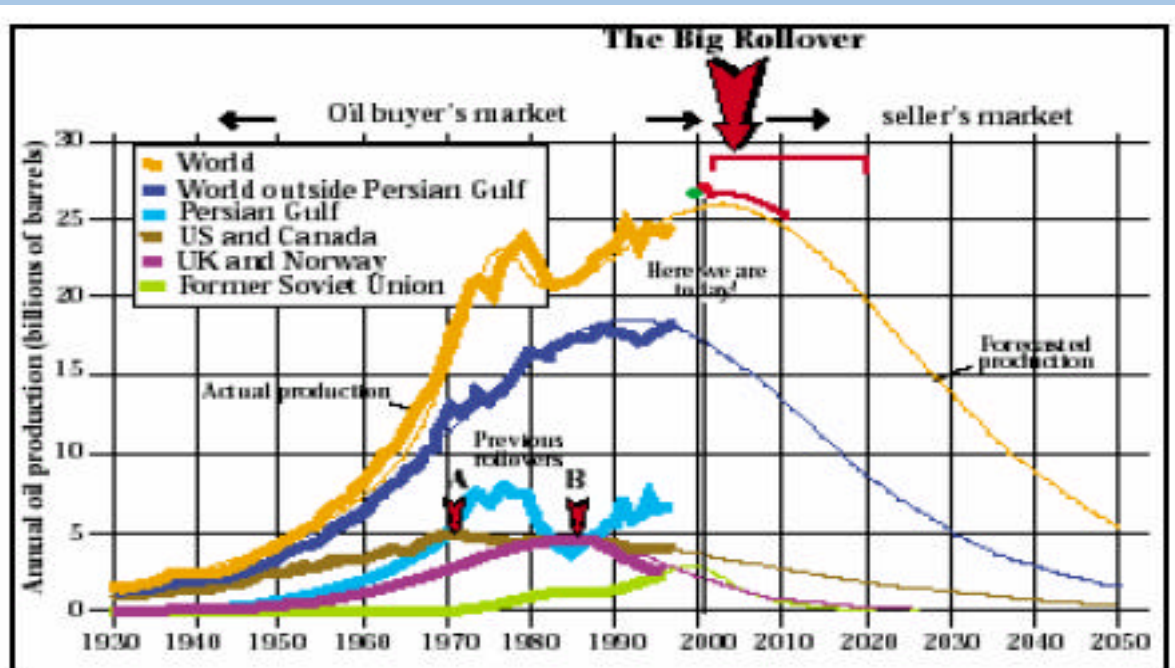
# Oil Prices: How High is High?

Oil prices in US\$ of 2004:

- 1864: 92 \$/b, but at that time no oil dependent economy
- 1980: 81 \$/b, economic difficulties
- 2004: 55 \$/b
- 2005: 60+ \$/b
- Expected: restraints in refinery capacity lifted by 2008



# How Much Oil is Left ?



Year of The Big Rollover	Forecaster
2003	Campbell, 1998
2004	Bartlett, 2000
2007	Duncan and Youngquist, 1999
2019	Bartlett, 2000
2020	Edwards, 1997
2010-2020	International Energy Agency, 1998

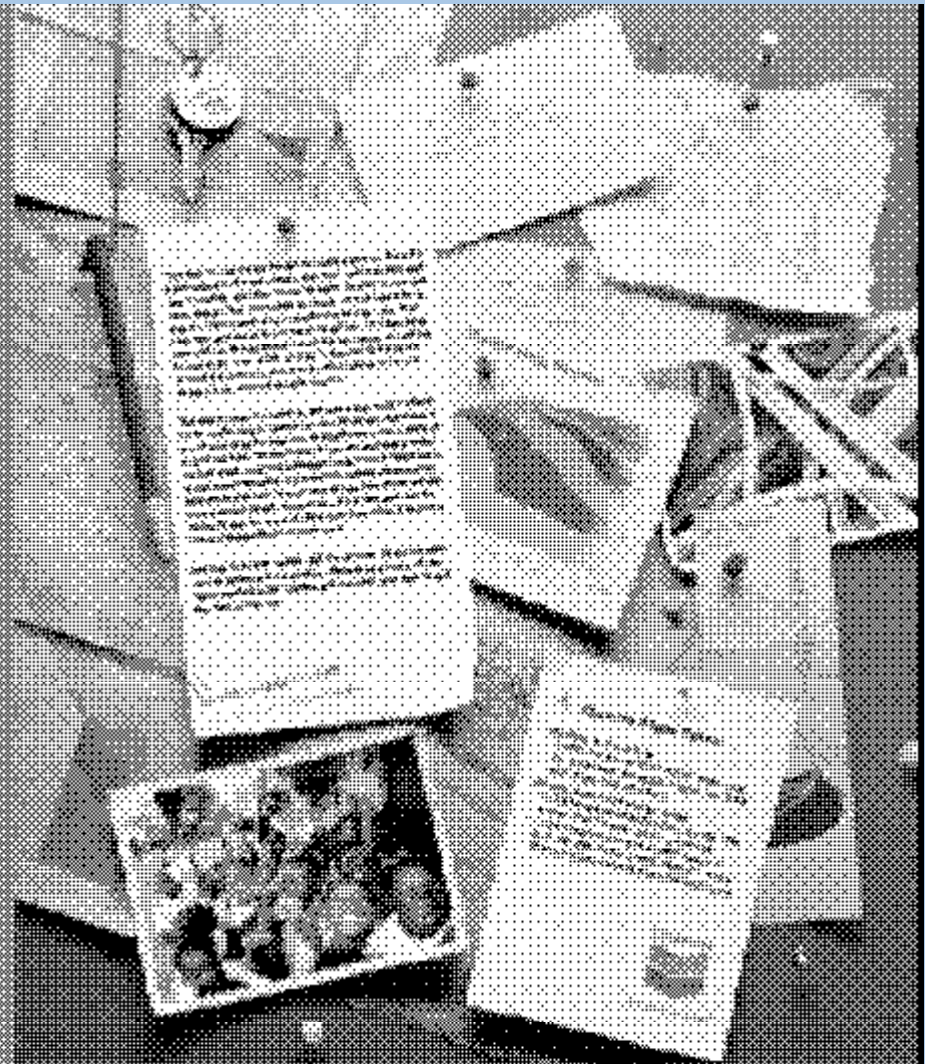
at EIA Midterm energy Outlook Conference, april 12 2005



# chevron. so is this something you should be worried about?

The world consumes two barrels  
of oil for every barrel discovered.

Oil is the most important resource in the world.



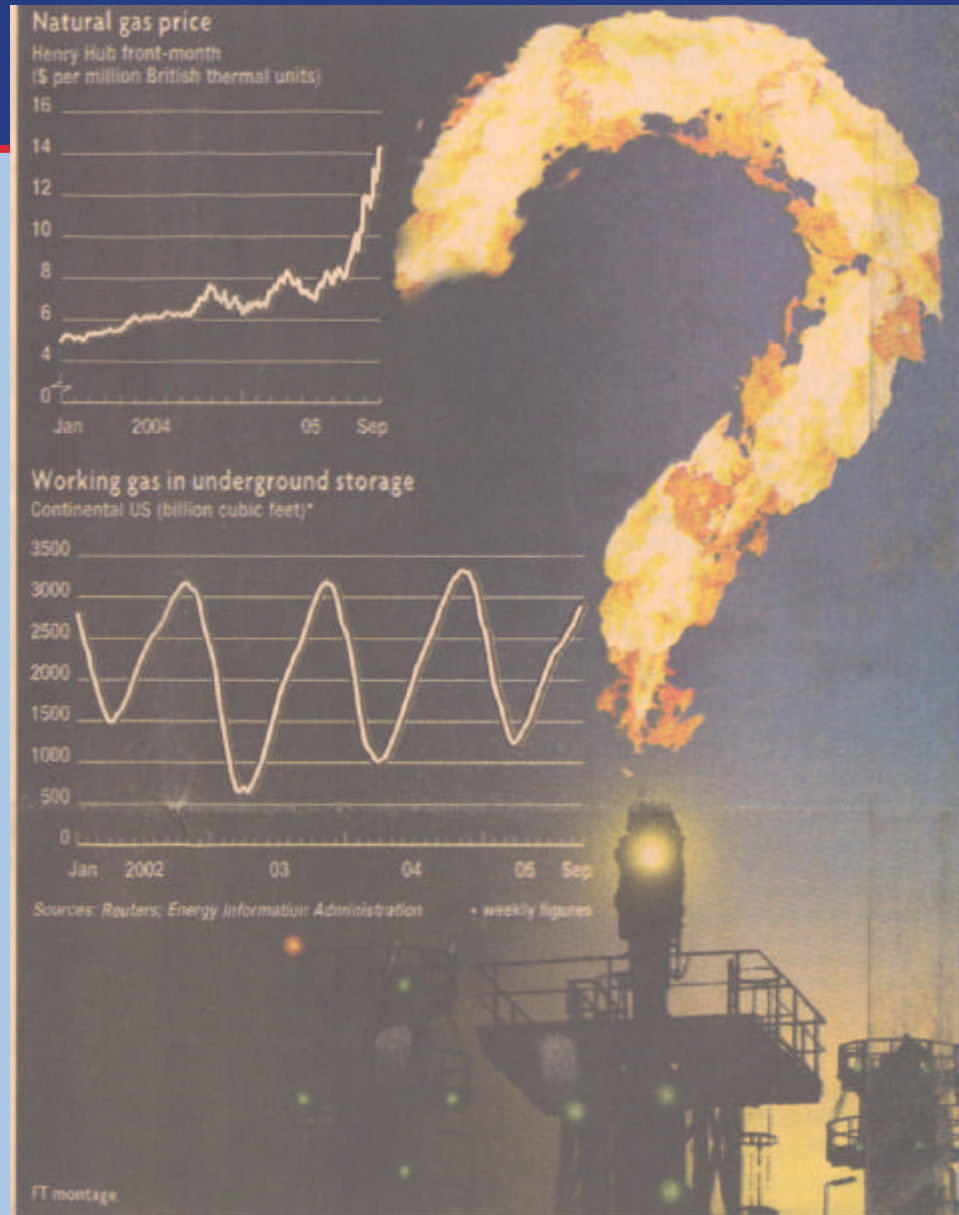




# Nymex futures until dec 2010: >6\$/mbtu

**High gas prices  
squeeze**

**US manufacturers**  
(Financial Times 3 Oct '05)

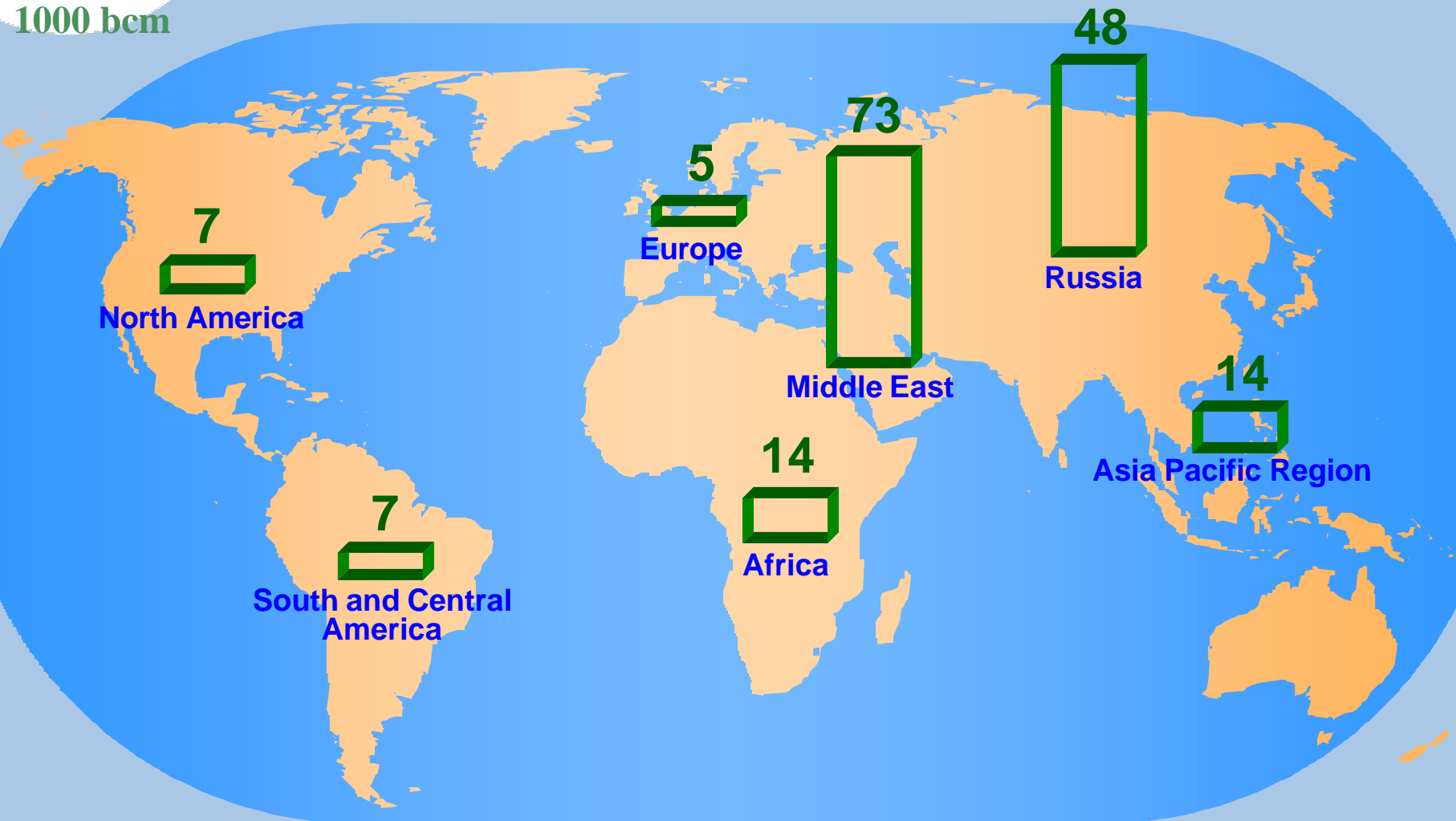




# World Gas Reserves

Proven 180 Trillion m<sup>3</sup>  
R/P ratio ~66 years

1000 bcm



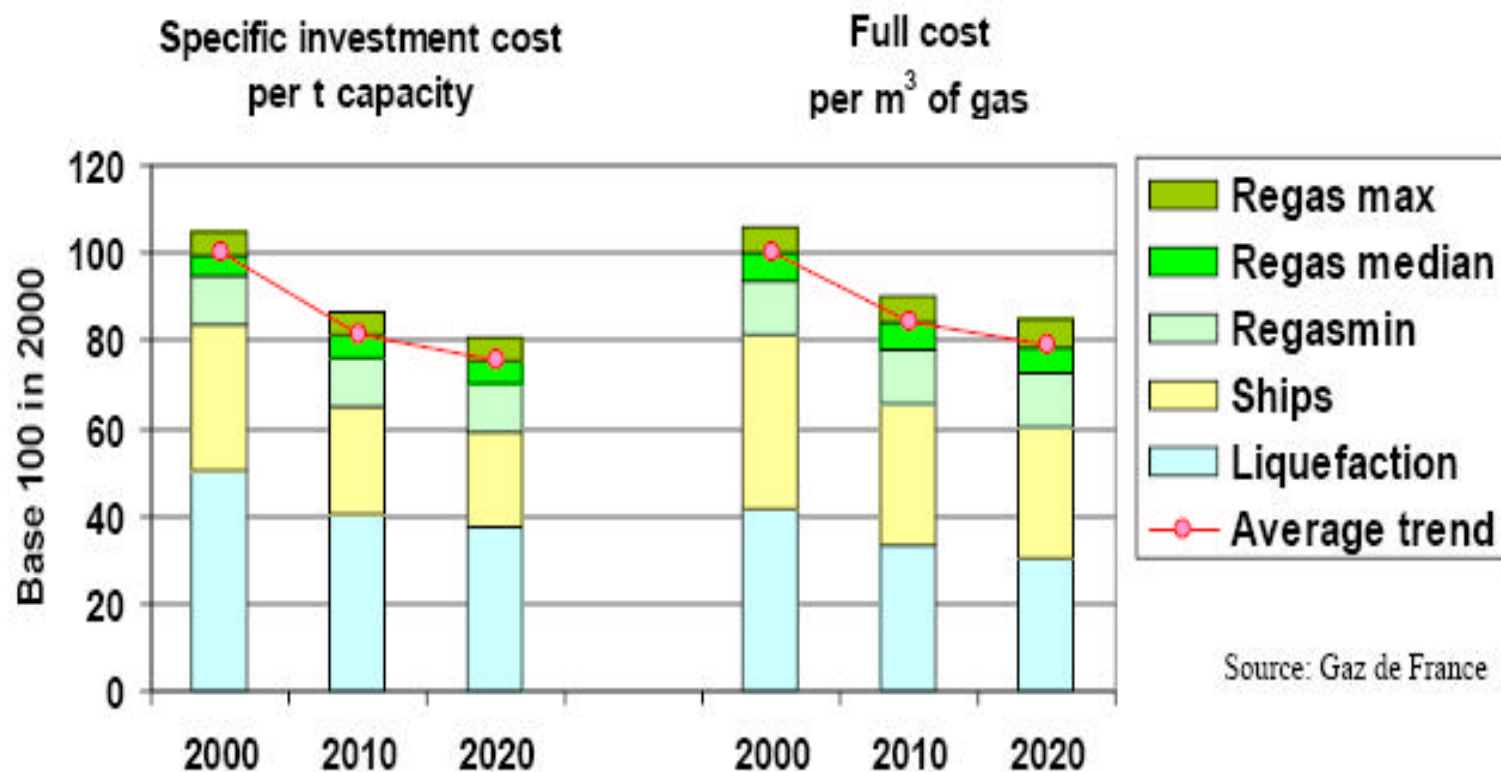


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# LNG trumps: decreasing costs

For a 7 400 km LNG chain



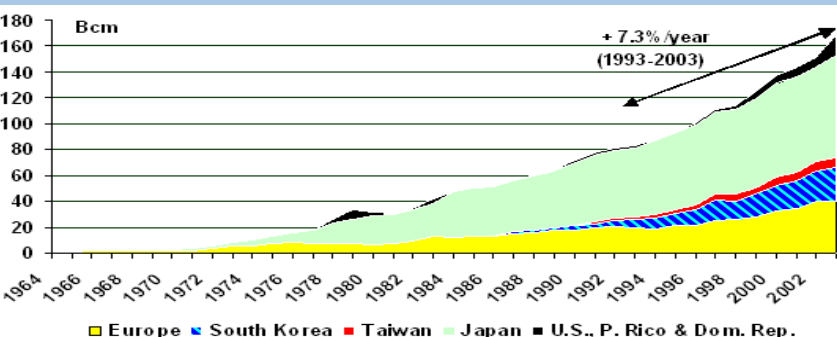
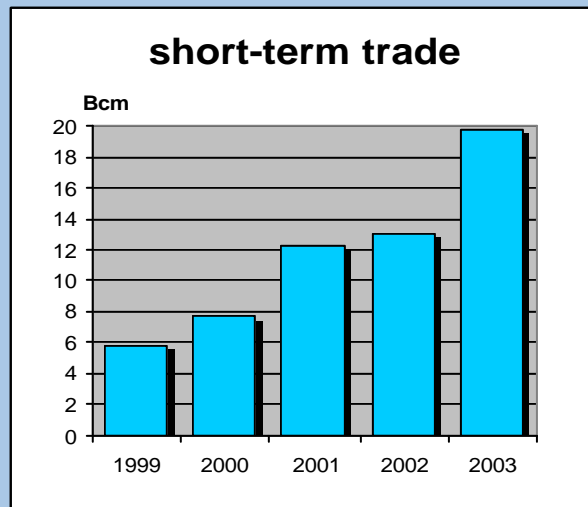
Source: Gaz de France

Source: presentation by GdF at 19th WEC, sept. 2004

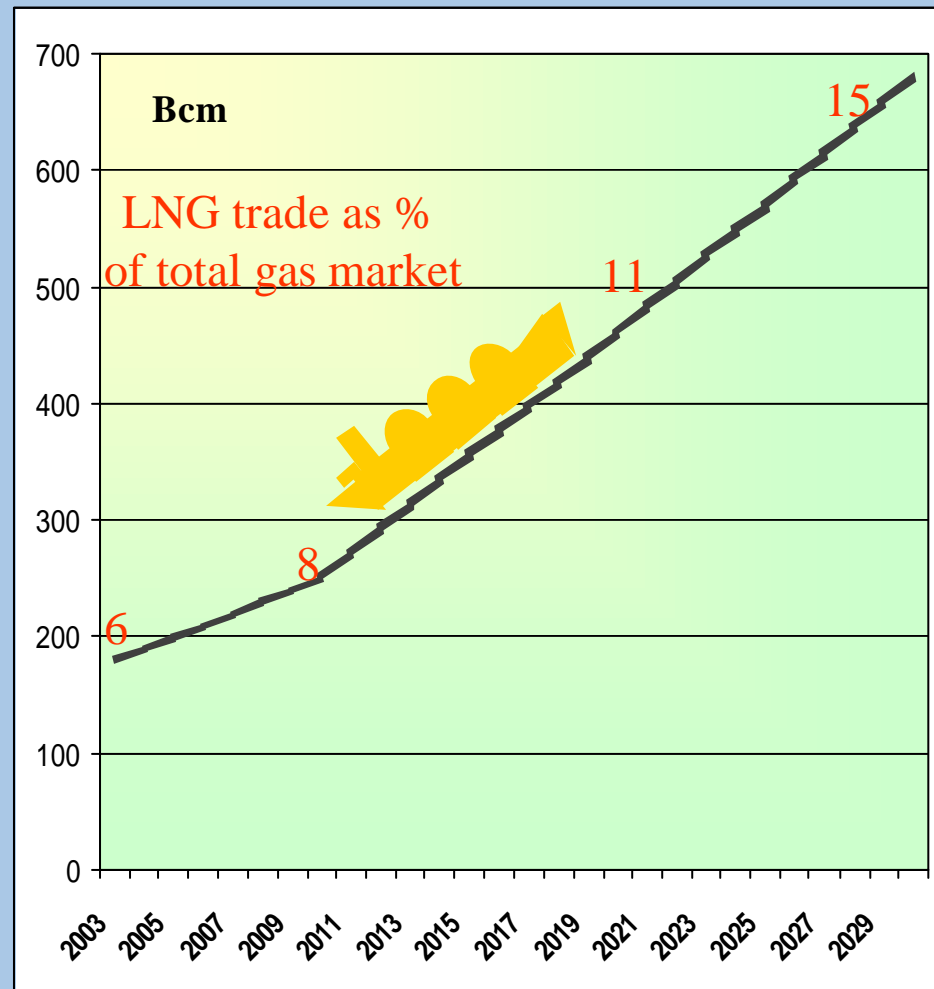




# LNG Trade History and Perspectives



History (CEDIGAZ)



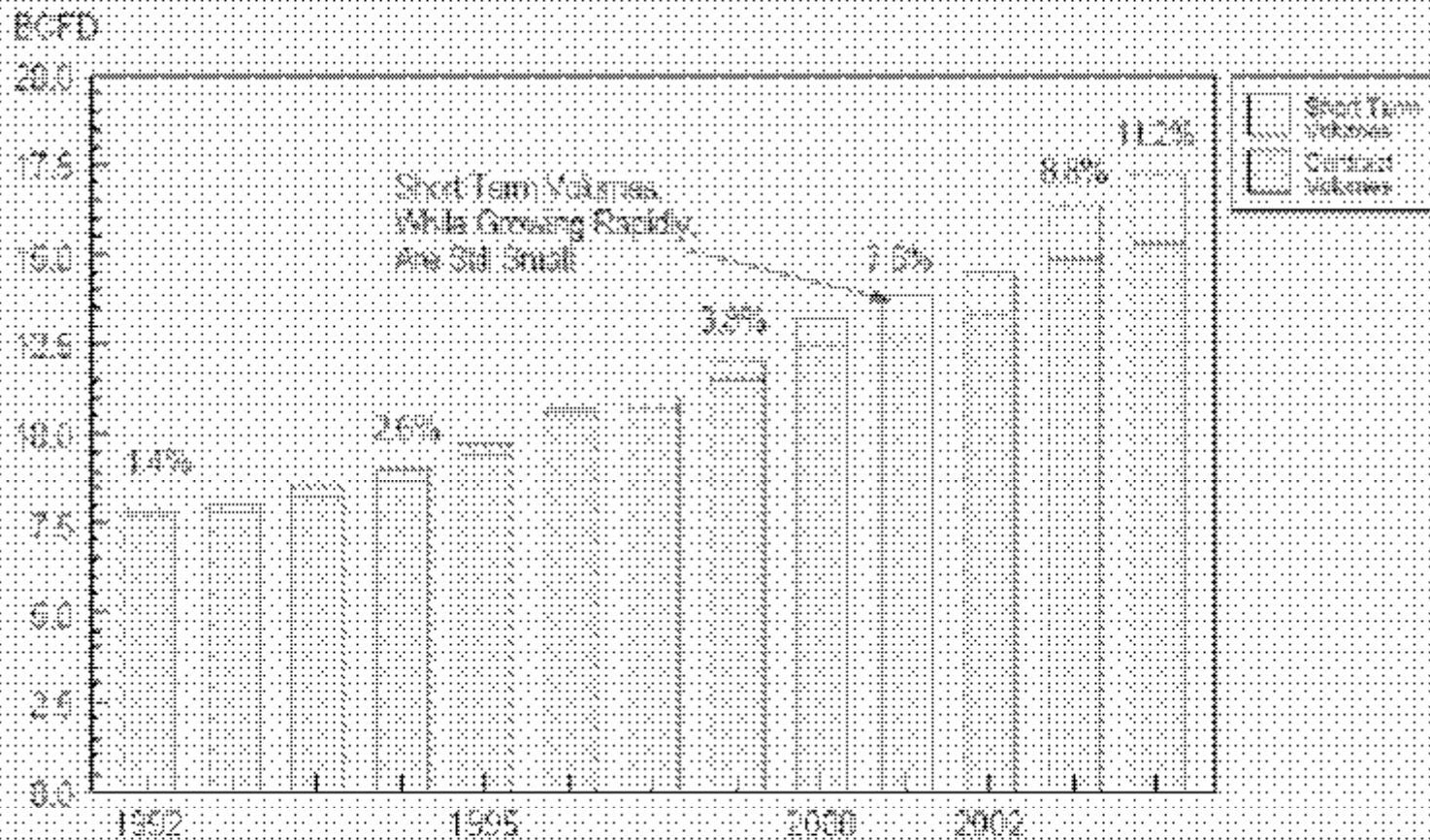
Forecast (IEA weo 2004)

GHB Verberg (IGU)



# LNG Spot Trade Grows, but remains < 20%

LNG TRADE SHOWING THE GROWING ROLE OF SHORT TERM SALES  
BCFD





# International LNG Trade: Connecting Markets, Competing Markets!





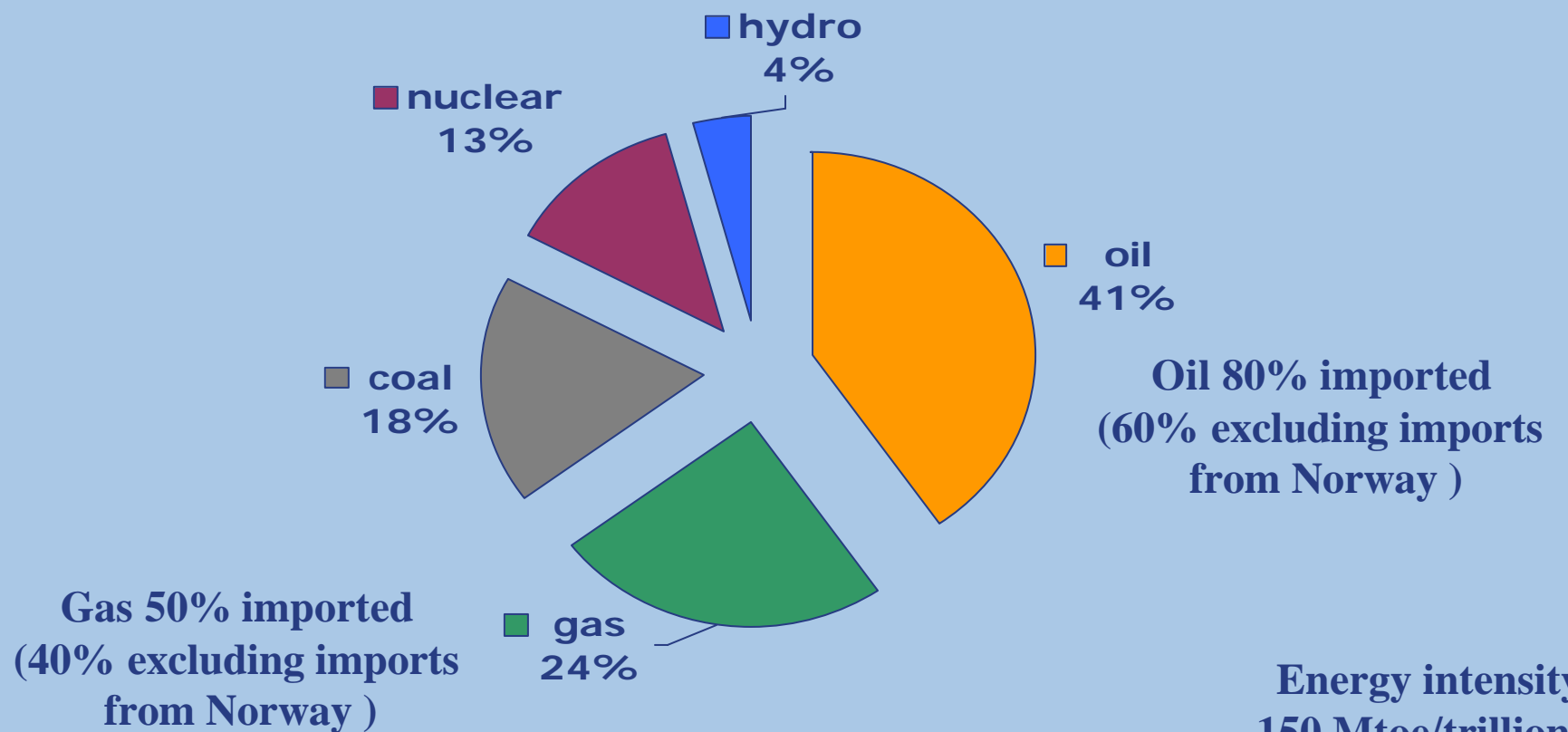
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# Primary Energy EU25 (2004)

1719 Mtoe (1910 Bcm gas eq.)

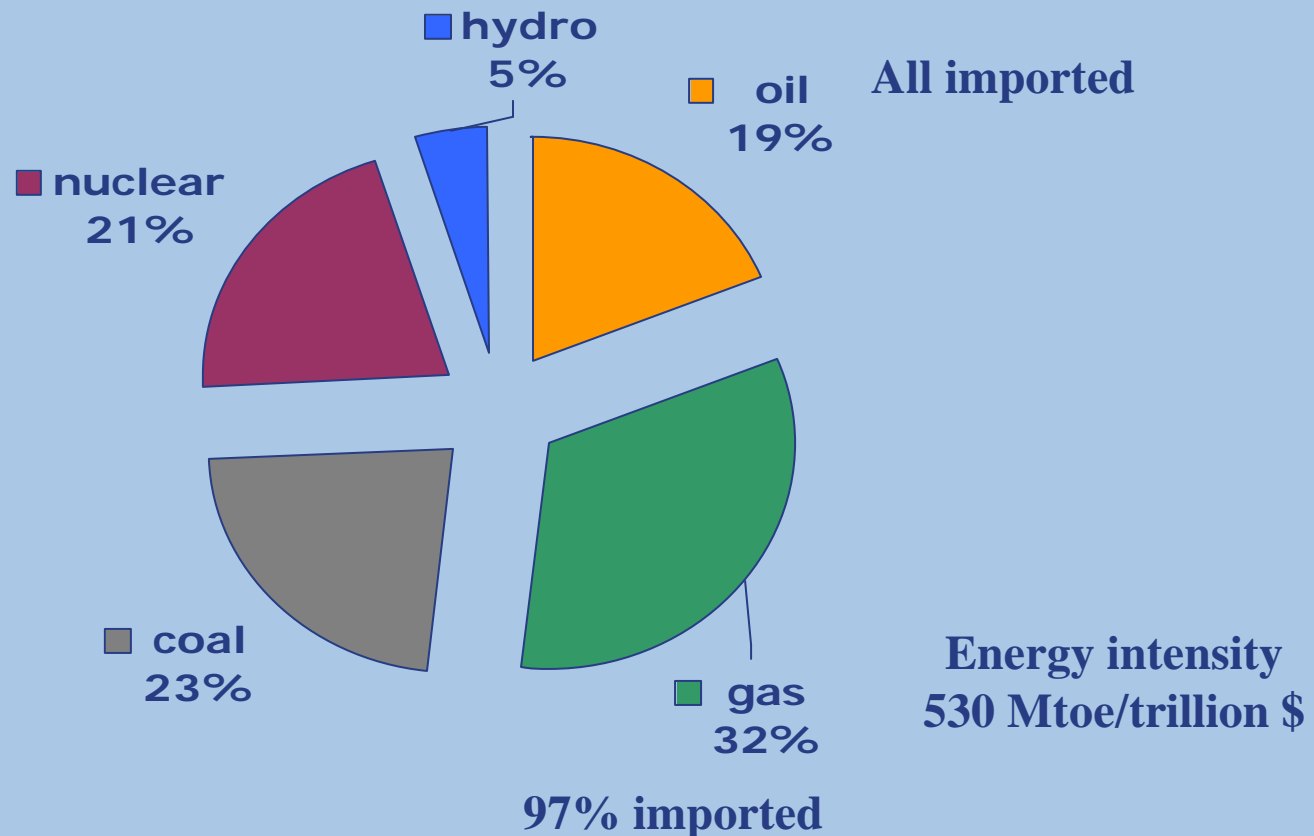


Energy intensity  
150 Mtoe/trillion



# Primary Energy Slovakia (2004)

19 Mtoe (21 Bcm gas eq.)





# Gas Imports EU25 (2004)

• Russian Federation	107 BCM
• Norway	75
• Algeria LNG+pipelines	55
• Nigeria LNG	15
• LNG several sources	<u>6</u>
	258

Total Consumption 467

Import dependency will grow!



# Regulation: EUROPE

- In the eighties and first part of the nineties supply of gas to Europe was expected to be abundant;
- Security of Supply was (therefore) not considered to be an issue;
- Regulation of the gas sector was very much done along the lines of the regulation of the electricity sector.
- The energy intensive industry lobbied hard and referred to low energy prices in the US with a liberalized, competitive market.



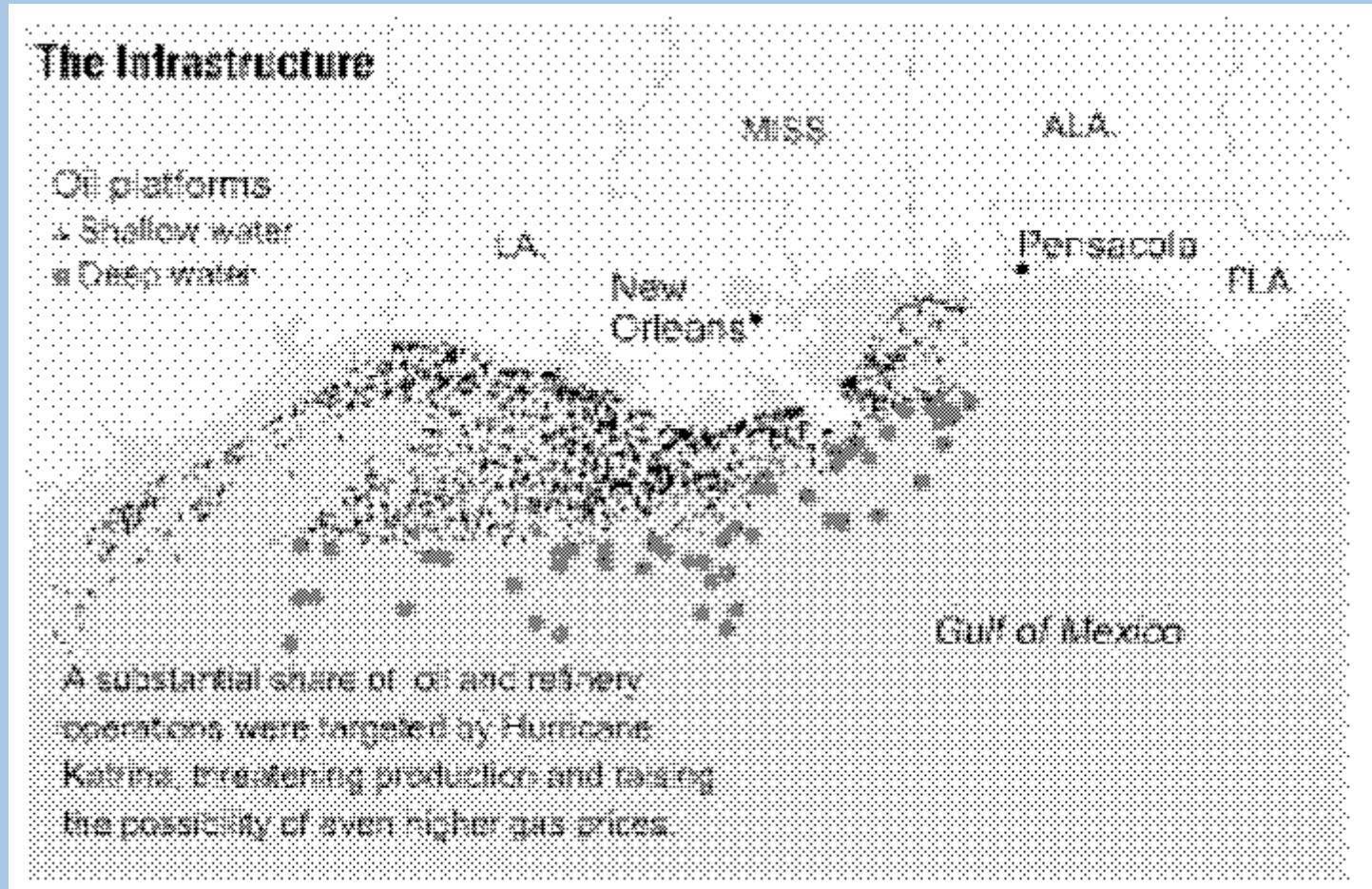


# Regulation: EUROPE

- The European gas market changed towards a sellers market during the implementation of regulation/liberalization;
- And it became clear that Europe will become more and more dependent from a small number of countries:
- Security of Supply is (again) on the agenda!

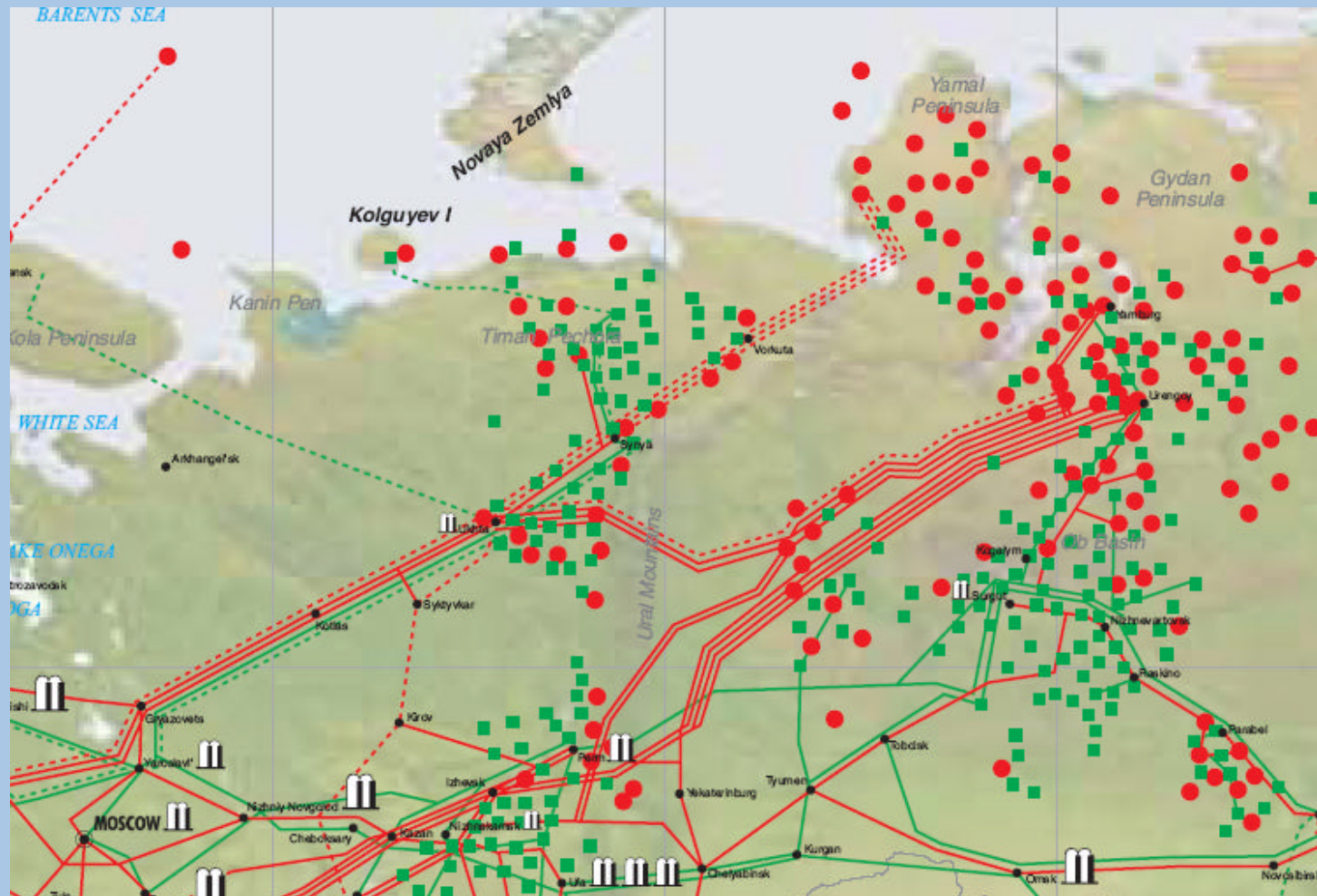


# SoS: Key Energy Region (1): Risk : Tornado's





# SoS: Key Energy Region (2): Risk : Melting Permafrost







# SoS: Key Energy Region (3): Risk : Political Situation?





# SOS: Several Key Straits : Risks : Overloading and Terrorism





# Replacement of Reserves

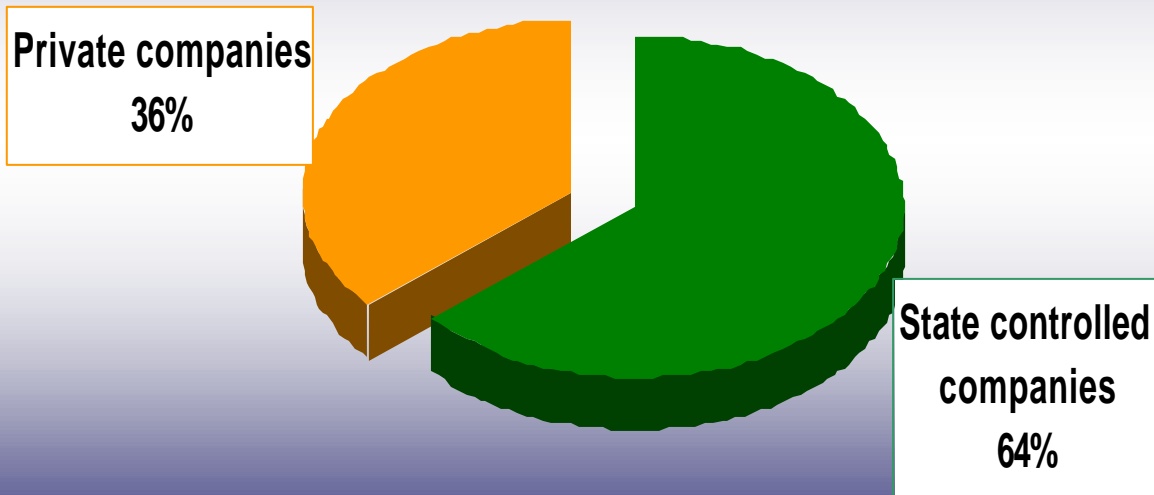
... the industry has replaced only half the reserves it has produced and needs to spend \$ 40 bn a year, rather than the current \$ 14 bn, to ensure it found a new barrel of oil for every barrel consumed.

(Wood Mackenzie in Financial Times, 4 Oct 2005)



# SoS: Who Owns the Gas (and Oil) Reserves?

## CONTROL OVER PRODUCTION OF REMAINING COMMERCIAL RESERVES NATURAL GAS





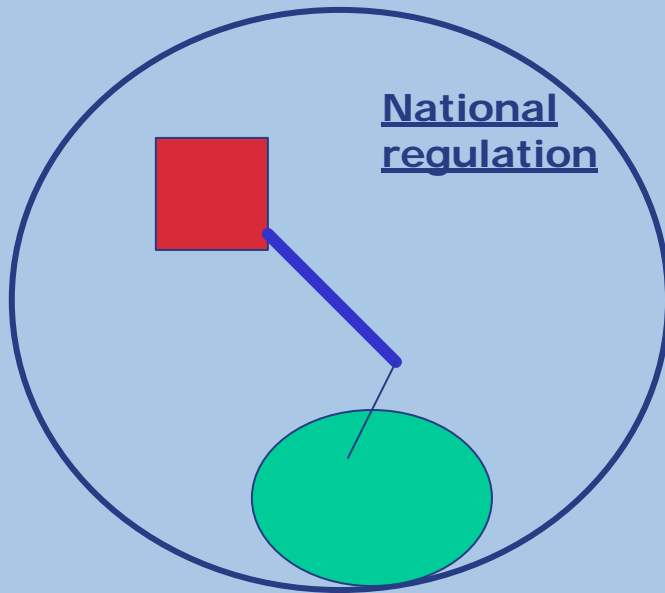
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# Regulation: Electricity



## Business levels

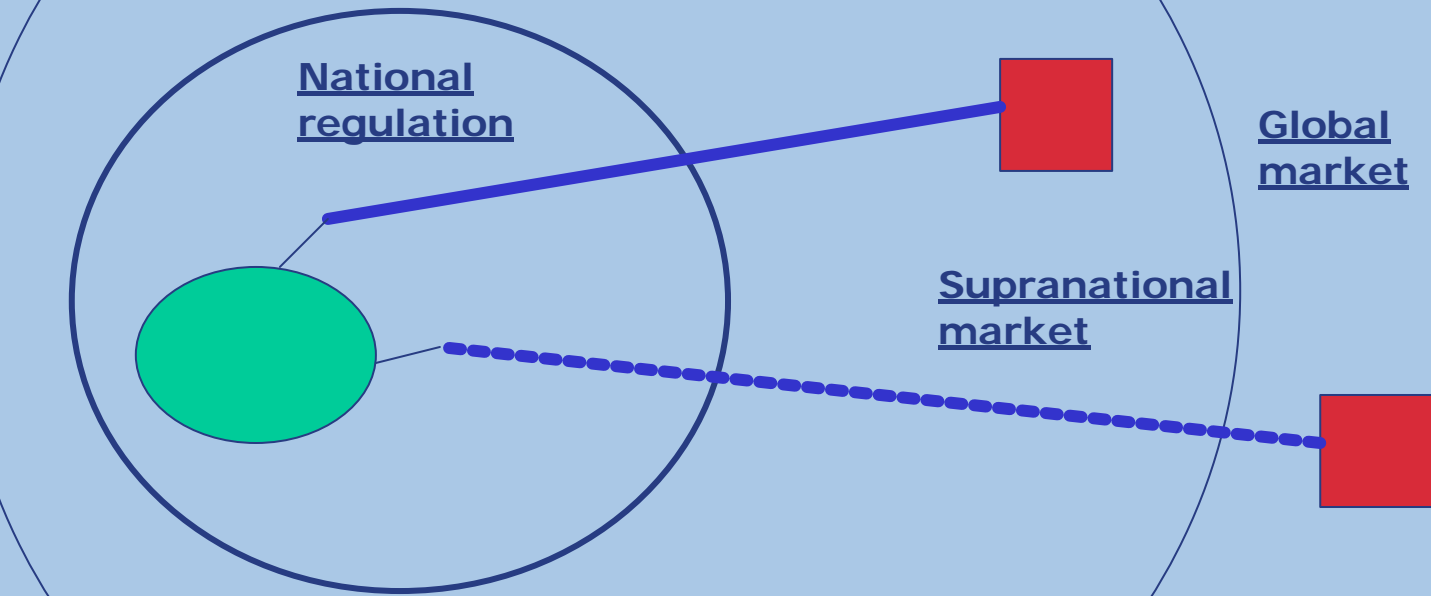
- production
- transmission
- distribution/consumption

## Electricity chain:

- Production close to consumption  
(local, regional, national scale)
- Regulation on a national level  
(foreseeable effects; consistency)



# Regulation: Gas



## Business levels



production



transmission



distribution/consumption

## Gas chain:

- Production and supply: supranational / global
- Consumption and marketing: national / local

**National regulation** versus  
**international market dynamics**



# Regulation: EUROPE

- At the same time LNG is connecting regional markets (North America, Europe, Japan / Pacific Rim and
- “New” gas import regions are making their presence at the world gas market known (India, China and Renewed US)
- This combination implies competition for supplies between gas importing regions:



# Regulation: EUROPE

- Competition will presumably not only be on PRICE;
- But also on the conditions at and structure of the competing markets;
- So the type of regulation in an importing region/country will have an effect on its attractiveness for an exporting country;
- To reduce risks exporting countries also want to diversify!



# Regulation: EUROPE

- EUROPE's regulatory framework needs to be in line with the requirements of an increasing global competition:
- Long Term Contracts will remain the backbone of the gas industry, they are necessary to realize the huge investments in the total gas chain, also for the LNG-chain.



# Regulation: EUROPE

- Investments in gas infrastructure should also be encouraged:
- Competition flourishes better with a slight overcapacity.
- But there must be a sound fin./econ. base for investments: "Open Season", to assess the market demand for new capacity



# Regulation: EUROPE

- Regulators in Europe and the EU-Commission are showing signs of understanding that some regulatory changes are necessary:
- In the UK since some time Long Term Contracts to enter the National Grid (up to  $>10$  years) are made possible again;
- Exemptions are granted to certain infrastructure projects, but uncertainty for investors remains



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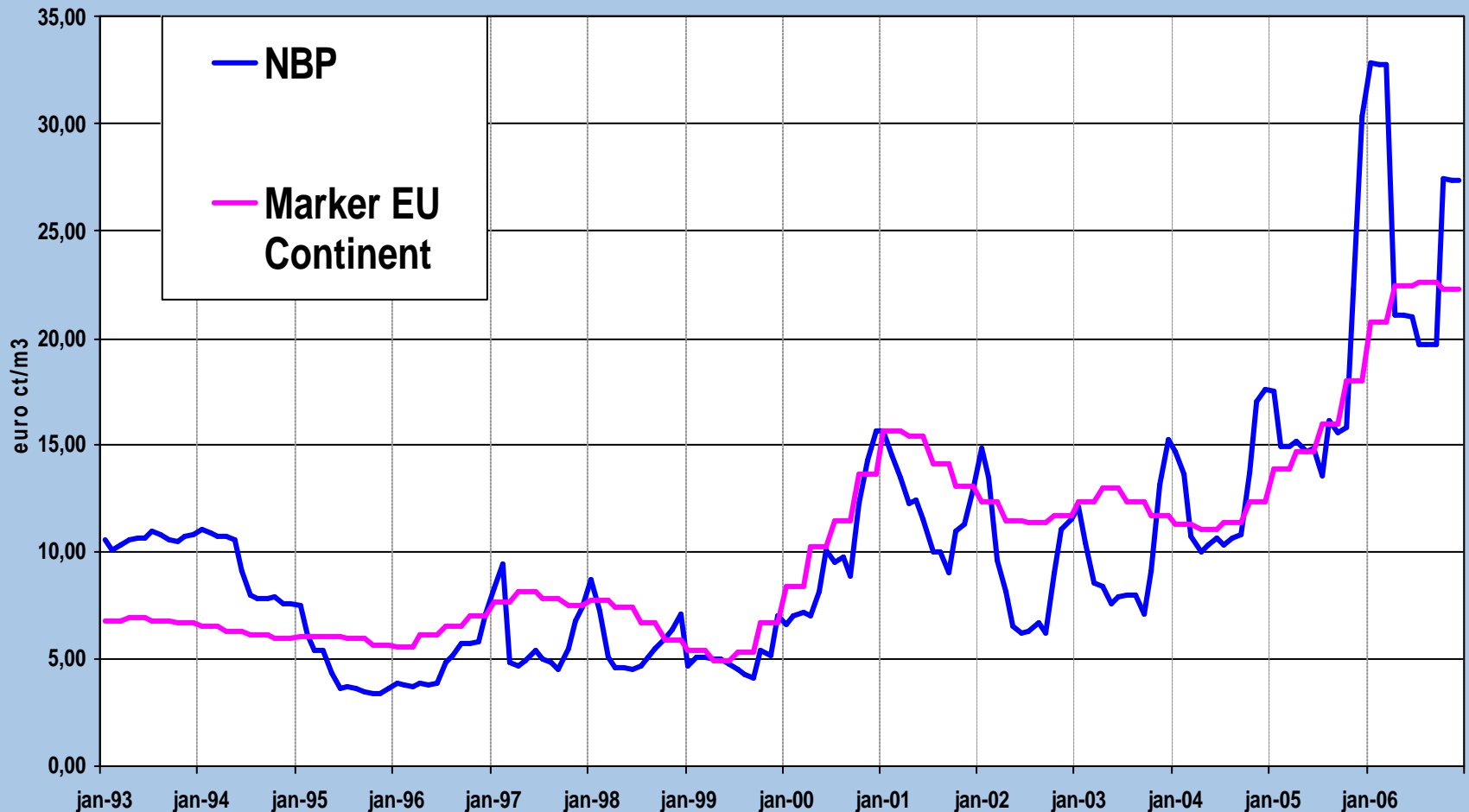
# Regulation: EUROPE

- Managing expectations is key for an acceptable result: liberalization is not in itself leading to lower prices, if done well it leads to higher efficiency, but
- Prices of gas in a free market will be determined by the supply / demand balance.
- Strong price volatility is also part and parcel of a liberalized gas market



# Gas Prices: UK (spot) versus EU Continent (long term contract)

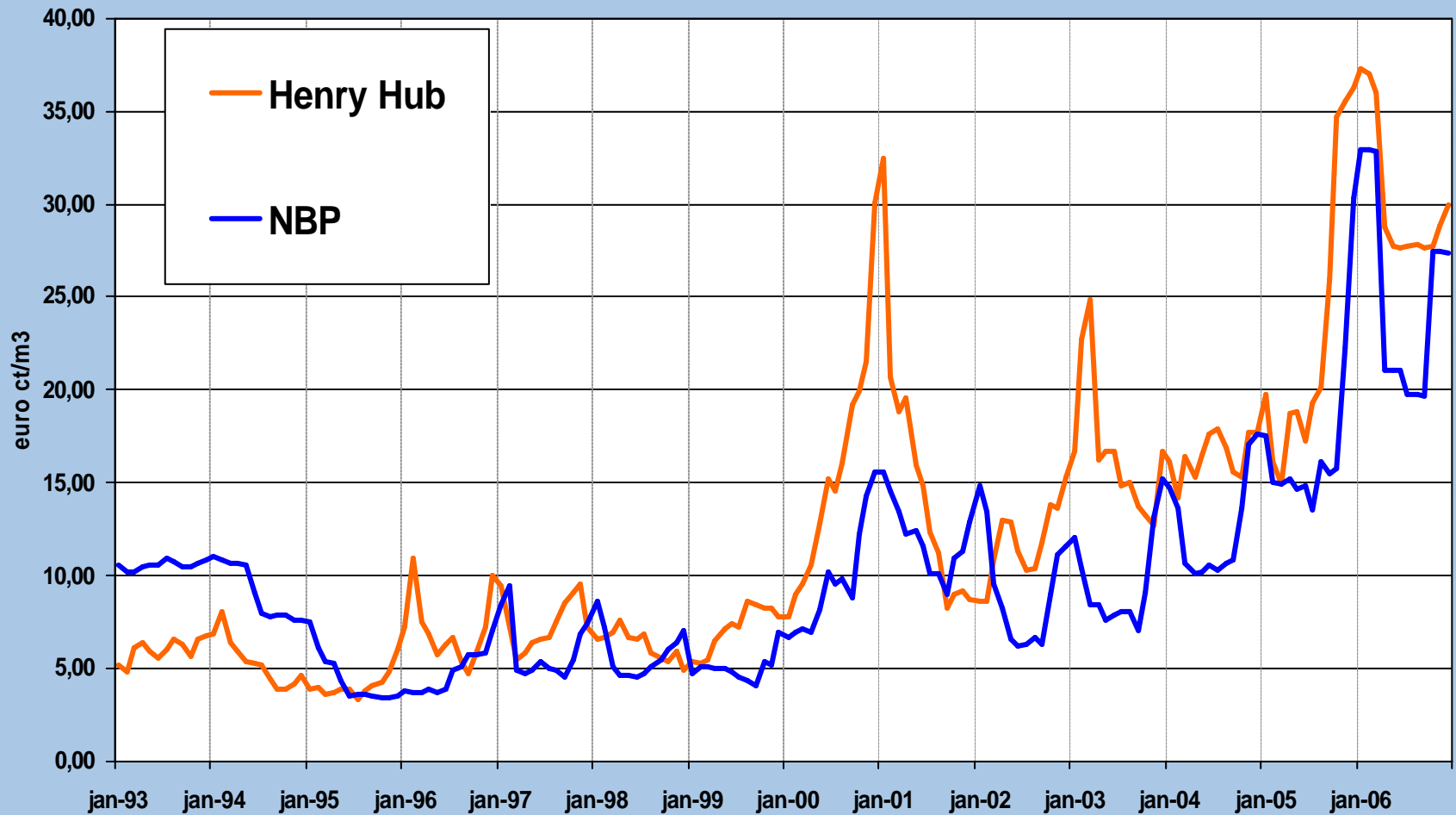
Price is monthly average





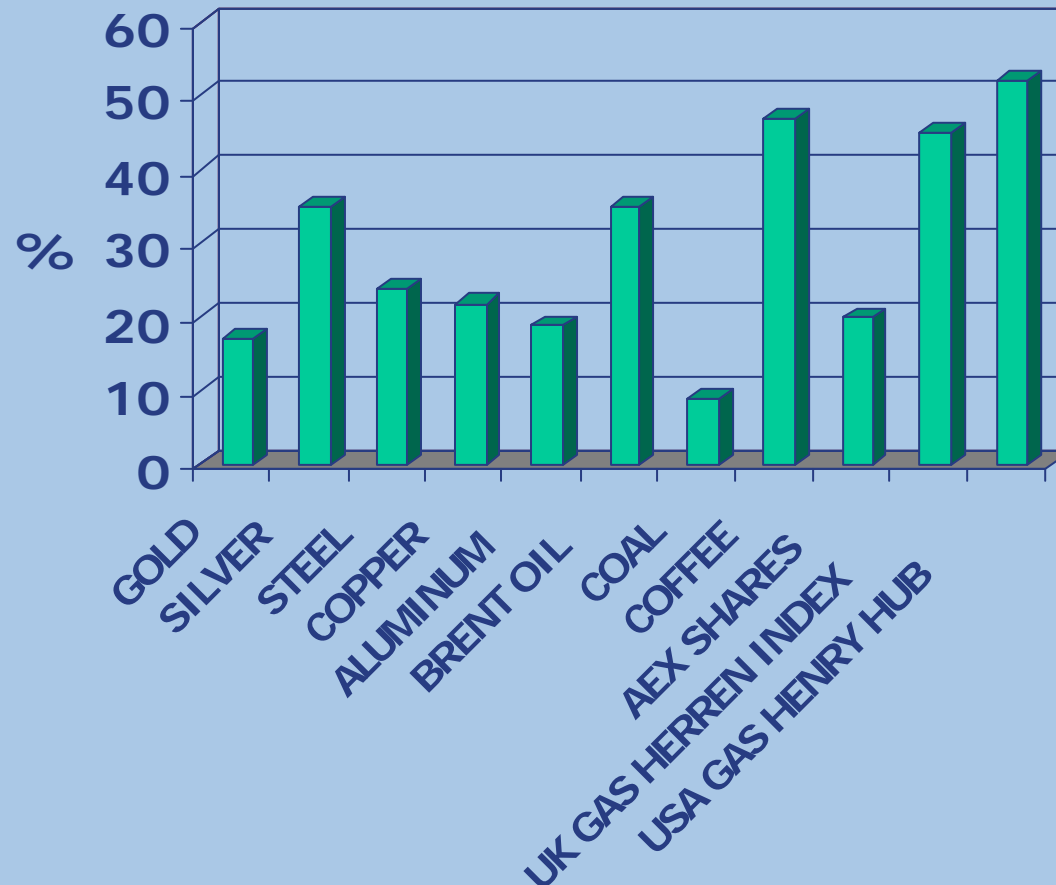
# Gas Prices USA - UK

Price is monthly average





# Price Volatility of Several Commodities





# Three Commandments

*for a productive legal & regulatory environment*

## Predictability

stable, long-term  
regulatory  
frameworks

Reliable framework  
for enforceability  
of commercial  
contracts

## Consistency

taking  
characteristics of  
natural gas market  
into account

## Transparency

market rules and  
opportunities must be  
clear to all players



**Thank you  
for your attention**



**See you in Amsterdam!**  
**23<sup>rd</sup> World Gas Conference  
and Exhibition**  
**June 5 – 9 2006**

